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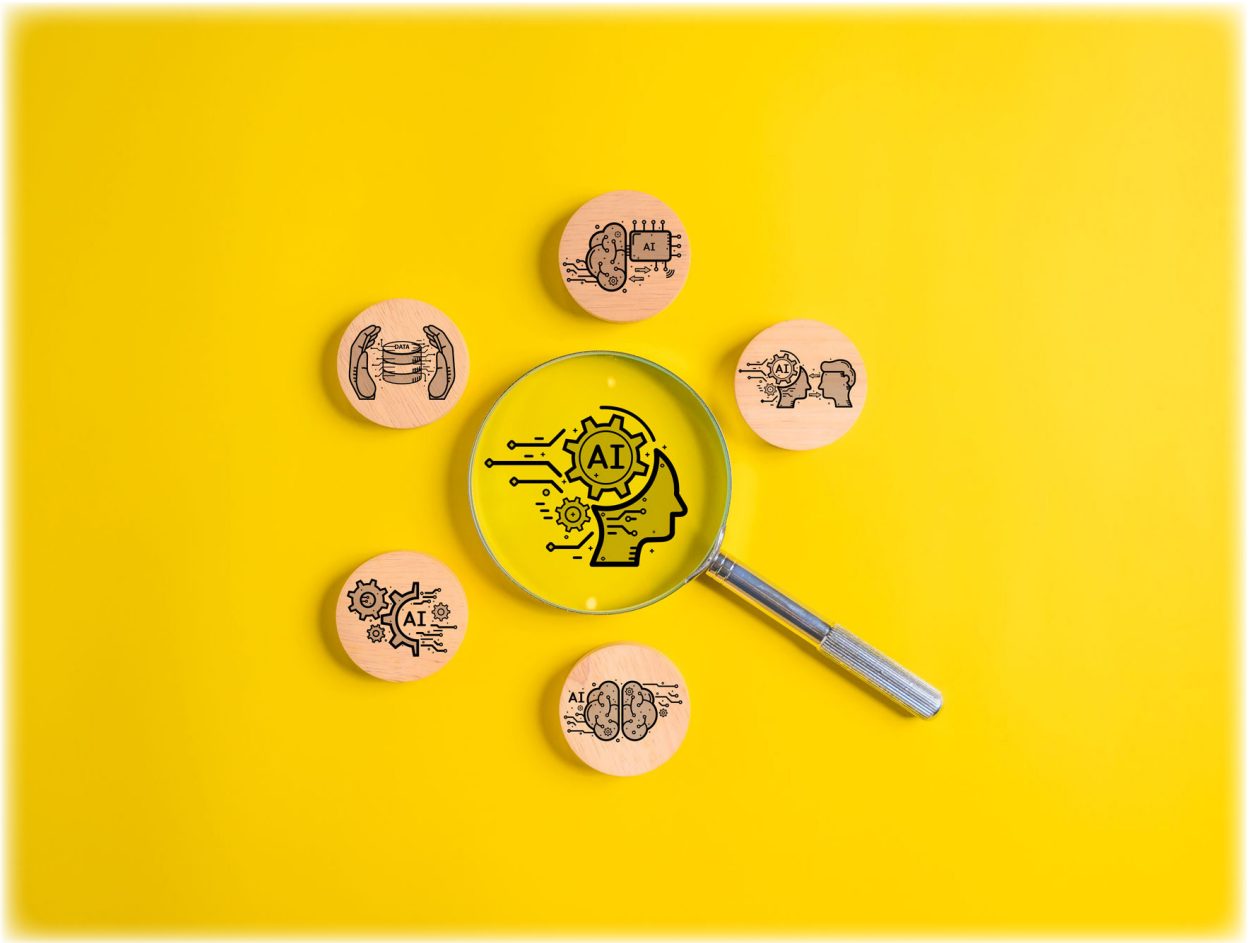

White Paper on Artificial Intelligence in the EU

International Criminal Justice and the War in Ukraine

Two Major Earthquakes Hit Türkiye and Syria An Evaluation of Crisis Management Efforts

Navigating Challenges and Harnessing Potential

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Foreword

Dear Reader,

We are happy to be with you in this second issue of 2023. We again had to make hard choices in selecting the articles to make it to the journal. Most notably, the Russian invasion of Ukraine and its repercussions on the global geopolitical landscape are hard to escape. Yet, our preference to keep important issues alongside the war in Ukraine pushed us to make a selection, that you will judge on its soundness while going through the journal.

As it became a tradition, this issue also brings deep insight into four different topics of our selection. The first article is a white paper that narrates the EU's endeavour to lead the way in developing and using AI in a way that is compatible with the values it stands for and its strengths. In this pursuit, the White Paper argues the EU, by defining a comprehensive regulatory framework on AI, intends to strike a balance between fundamental rights protection and public security and, by imposing this definition on its competitors, the US and China, acts as a tech regulator. Accordingly, the Artificial Intelligence Act is the fruit of such effort. To make its point, the White Paper starts with the historical narrative of EU legislation, positions the EU by citing AI applications in Law Enforcement settings, emphasizes EU concern for responsible AI by elaborating on the EU's Human-centric AI approach and finally highlights the NATO approach as the organization embodies the Union's collective defence structure.

The second article looks into the question of whether it will be possible to hold perpetrators of crimes during the Russian invasion of Ukraine accountable. The question became consequential as it became clear that Russian forces purposefully targeted civilian infrastructure and non-combatants, including children and women. The author meticulously outlines the legal options to investigate the Russian invasion and committed crimes. These options are also assessed regarding their effectiveness and implications for international criminal justice.

The third article is about a serious of extremely destructive earthquakes that struck Türkiye and northern Syria on February 6th, 2023. The policy brief was prepared to examine how well the crisis management efforts were implemented during the earthquakes by analysing risk assessment, preparedness as well as response in comparison the two countries, i.e. Türkiye and Syria. The paper concludes with conclusion and policy recommendations with an aim to identify lessons to be learned from the disaster and improve national and international crisis management in similar cases in the future to reduce human suffering and increase accountability.

The fourth and last article navigates the landscape of woman refugee entrepreneurship in the United States. Start-up knowledge, local context, bank access, identifying a business or service, and resources can pose significant obstacles in addition to refugees managing trauma and unfamiliar cultures and social institutions. Thus, the authors argue the journey towards entrepreneurship is far from straightforward. Still, there are many women refugee entrepreneurs who surmounted all those challenges. This underscores the importance of policies that empower these women economically and personally.

Sincerely yours,
Beyond the Horizon ISSG

White Paper on Artificial Intelligence in the EU

by Domenico Frascà*

The EU Framework on Artificial Intelligence

Artificial intelligence is a family of technologies that display intelligent behaviour by analysing their environment and taking actions, with some degree of autonomy, to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world – i.e., voice assistants, search engines, or face recognition systems – or AI can be embedded in hardware devices – i.e., advanced robots, autonomous cars, or drones. Many AI technologies require training data to improve their performance. Once they perform well, they can help improve and automate decision-making in their specific domain. In general, AI can optimise existing processes or enable brand-new activities, offering new opportunities and benefits for private and public services - including Law Enforcement - but also introducing serious risks. As first observed by the European Parliament in the Resolution of 16 February 2017 on Civil Law Rules on Robotics, the use of systems regulated by AI involves risks that are different from those linked to the human factor, inevitably posing ethical and legal problems[1] . With regards to privacy, it can be endangered by the unregulated use of facial recognition in public spaces. Furthermore, based on the design and type of data entered, AI systems could reproduce the existing discrimination in the offline world, making decisions influenced by ethnicity, gender, or age class. The so-called "deep fakes" – false but extremely realistic visual and audio contents, which are increasingly used in the field of information warfare – are also created through AI.

Still, the benefits brought by artificial intelligence are enormous. Faced with the rapid technological development determined by the growth of solutions based on artificial intelligence – the number of patent applications published in the last decade has increased by + 400% – and with an international context in which the main competitors of the European Union are heavily investing in this technology, the European Commission has adopted a series of initiatives aimed at regulating AI.

The fact that fragmentation of national actions with regard to AI applications are considered risk to the EU global competitiveness and intention to set standards were the main reasons that prompted the EC to launch the European Strategy on Artificial Intelligence in April 2018 [2]. The main assumption at the basis of the European strategy is that the EU "can lead the way in developing and using AI for good and for all, building on its values and its strengths". These strengths inter alia include: world-class researchers, labs, and start-ups; the Digital Single Market; a wealth of industrial, research and public sector data which can be unlocked to feed AI systems [3] . Within its strategy, the European Commission then identified three distinct but complementary commitments: (a) increase investments to a level that corresponds to the economic weight of the European Union in the world; (b) leave no one behind – especially in the education field – and ensure a smooth transition to the era of artificial intelligence in the workplace; (c) ensure that new technologies reflect European values and principles. With respect to this last commitment, the EC made explicit reference to the General Data Protection Regulation (GDPR) of 2016 on data protection and privacy in the European space – which at the time was not yet in force[4] – and to Article 2 of the Treaty on European Union (TEU), which lists the founding values of the European political community: "respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities" [5].

In the aforementioned Communication, the European Commission also announced the adoption of a series of initiatives on artificial intelligence, including the launch of the European AI Alliance, which is a multi-stakeholder forum that has rapidly attracted members of civil society, industry and the academic world, and the institution of a High-Level Expert Group on Artificial Intelligence (AI HLEG) [6]. The 52 experts of the AI HLEG were asked by the EC to develop a set of ethical guidelines, published in April 2019 under the name of Ethics Guidelines for Trustworthy AI [7], and to make policy and investment recommendations, which were presented in June 2019 in the Policy and Investment Recommendations for Trustworthy AI [8]. Overall, these two documents highlighted the need to join forces at a European level, in order to develop a human-centred approach to artificial intelligence as the main feature of "AI made in Europe". This vision was reaffirmed by the EC itself in COM (2019)168 entitled "Building Trust in Human-Centric Artificial Intelligence" of April 2019 [9]. Finally, on July 2020 the AI HLEG presented its final Assessment List for Trustworthy Artificial Intelligence (ALTAI), identifying seven key requirements – human agency and oversight; technical robustness and safety; privacy and data governance; transparency; diversity, non-discrimination and fairness; environmental and societal well-being; accountability – to ensure that users benefit from AI without being exposed to unnecessary risks by indicating a set of concrete steps for self-assessment . [10]

The European Strategy on Artificial Intelligence was followed by the White Paper on Artificial Intelligence of February 2020, accompanied by a Communication from the EC itself outlining the European Strategy for Data [11] [12]. In general, the document suggested establishing within the European space both an "ecosystem of excellence" in the development and diffusion of AI systems, and an "ecosystem of trust" based mainly on a human-centric approach to artificial intelligence. The White Paper was also accompanied by the "Report on the Safety and Liability Implications of Artificial Intelligence, the Internet of Things and Robotics", concluding that the current product

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safety legislation contains a number of gaps that needed to be addressed, notably in the Directive 2006/42/EC – the so-called "Machinery Directive" [13] [14].

During the development of the EU framework on artificial intelligence, the European institutions have also given importance to the security aspect of AI systems. In December 2020, the European Union Agency for Cybersecurity (ENISA) presented a report called "Artificial Intelligence Cybersecurity Challenges", warning that AI may open new avenues in manipulation and cyber-attack methods, as well as new privacy and data protection challenges for citizens, enterprises, and institutions. [15]

In defining its approach to AI, the European Union has decided to play the role of pioneer in the sector, similar to what it did with the GDPR of 2016. With COM (2021)205 of 21 April 2021, the EC has in fact announced an ambitious regulatory project on AI, which is still under development[16] . On the same data, the European Commission proposed to the European Parliament and the Council of the EU a regulation on harmonised rules regarding AI applications – the so-called "Artificial Intelligence Act" – emphasising that its approach is shaped by European values and risk-based, ensuring both safety and fundamental rights protection[17] . Once approved, this regulation would represent the first legal framework in the world on the AI sector. As stated in the proposal: "By improving prediction, optimising operations and resource allocation, and personalising service delivery, the use of artificial intelligence can support socially and environmentally beneficial outcomes and provide key competitive advantages to companies and the European economy. Such action is especially needed in high-impact sectors, including climate change, environment and health, the public sector, finance, mobility, home affairs and agriculture. However, the same elements and techniques that power the socio-economic benefits of AI can also bring about new risks or negative consequences for individuals or the society" [17] . The EU has therefore decided to regulate these elements and lay the necessary legal bases so that artificial intelligence has rules and specific guidelines within the common European space.

The appropriate balance between fundamental rights protection and public security is indeed one of the main pillars of the proposal. The European Union wants to ensure that European citizens can benefit from safe, transparent, ethical, and impartial AI systems under human control, thus placing specific requirements for all European or foreign AI systems used in the EU territory. Specifically, it aims at addressing risks of specific uses of AI, categorising them into 4 different levels: "unacceptable risk", "high risk", "limited risk", and "minimal risk". In doing so, the AI regulation will make sure that Europeans can trust the artificial intelligence they are using. For instance, the "unacceptable risk" category includes AI applications in which algorithms track users' behaviour to automatically assess what level of credit score to assign to individuals and companies – as widely used in China. Examples of elements classified as "high risk" are the following: AI systems that autonomously control critical infrastructures; AI applications that could endanger the life and health of citizens; CV sorting software for hiring procedures. All these systems will be carefully evaluated before being placed on the market, will be subject to minimum transparency obligations, and will be monitored throughout their life cycle. Anyway, the vast majority of artificial intelligence systems fall into the category of "minimal risk", therefore potentially not subject to the new European legislation.

Particular attention must be paid to biometric surveillance. Artificial intelligence powers the use of biometric technologies, including facial recognition applications, which are used for verification, identification, and categorisation purposes by private or public actors. While facial recognition markets are poised to grow substantially in the coming years, the increasing use of facial recognition technologies (FRTs) has emerged as a salient issue in the worldwide public debate on biometric surveillance. While there are real benefits in using facial recognition systems for public safety and security, their pervasiveness and intrusiveness, as well as their susceptibility to error, give rise to a number of fundamental rights concerns with regard, for instance, to discrimination against certain segments of the population and violations of the right to data protection and privacy [18]. In October 2021, the European Parliament passed a non-binding resolution that prevents the use of real-time facial recognition systems in publicly accessible spaces for the purpose of law enforcement, along with the creation of private facial recognition databases. With this resolution, the EP recognized that the use of AI for mass surveillance and other unlawful interference, such as the profiling of citizens in order to rank them and restrict their freedom of movement, pose a serious threat to fundamental rights [19]. The non-binding resolution sends a strong signal on how the EP is likely to vote in upcoming negotiations on the Artificial Intelligence Act.

The legislative framework on artificial intelligence will have a huge impact worldwide, as it was for the GDPR of 2016, which has become an international standard in its sector since it came into effect in 2018. With this proposal, the EU wanted to strengthen its competitive position with respect to its main competitors – China and the United States of America – by anticipating them in the definition of a regulatory framework that could thus become the reference standard on the global scene. This political dimension was reaffirmed by the Coordinated Plan on Artificial Intelligence 2021 Review, which goes hand in hand with the proposal for the Artificial Intelligence Act [20]. The new plan builds on the collaboration established between the EC and Member States – plus Norway and Switzerland – during the 2018 Coordinated Plan on Artificial Intelligence, which was a joint commitment to maximising Europe's potential to compete globally and an essential first step in defining actions and funding instruments for the uptake and development of AI across sectors. Moreover, it encouraged Member States to develop national strategies [21] [22]. The revised plan proposes around 70 actions for closer and more efficient cooperation between the EC and Member States on artificial intelligence between 2021 and 2027.

As already outlined in the White Paper on Artificial Intelligence of February 2020, the European Commission has thought about a series of tools to support the future legislation, in order to favour the birth of a public-private partnership on artificial intelligence, data and robotics to define, implement and invest in a joint strategic research and innovation program for Europe. These tools include the establishment of centres of excellence for AI, the birth of new digital innovation poles that act as one-stop shops to provide access to technical skills and experimentation – so that companies can "test before investing" – and the creation of a central European database of AI resources needed for the uses of private companies and the public sector. With funds provided by the Digital Europe (DIGITAL) and Horizon Europe (HE) programs, the European Commission intends to invest around one billion euros per year in AI and mobilize further investment from the private sector and Member States through their National Recovery and Resilience Plans (NRRPs) for a total of 20 billion a year [23].

Schematically, the European approach to artificial intelligence has four fundamental objectives: (a) establish the enabling conditions for the development and diffusion of AI; (b) build a strategic leadership in high impact sectors; (c) making the EU a place where AI can flourish; (d) ensure that AI technologies serve people. These objectives fall within the broader concept of a continent that sees in technological progress, while attentive to the environment and human society, not only one of the keys necessary for the post-pandemic restart, but above all an indispensable tool for an ever-greater integration between Member States in a single entity capable of relating equally to the great world powers.

On March 2022, the European Parliament's Special Committee on Artificial Intelligence in a Digital Age (AIDA) adopted a report on artificial intelligence. On the one hand, it emphasised that the digital transition in the EU must be human-centric and compatible with the Charter of Fundamental Rights of the European Union. On the other hand, the report cautioned that the EU has fallen behind in the global race for technological leadership. This might result in a risk for standards that need to be developed elsewhere in the future, often by non-democratic actors [24]. The delay of the EU compared to its main competitors is the reason why the European Commission proposed the creation of the EU-US Trade and Technology Council (TTC), which was established in June 2021 to promote coordination between the two shores of the Atlantic Ocean on everything related to the technology sector – from regulation to taxation, passing through cybersecurity [25]. On May 2022, meeting at the second Ministerial Summit of the TTC in Paris, both parties discussed the implementation of common AI principles and agreed to develop a joint roadmap on evaluation and measurement tools for trustworthy AI and risk management [26]. However, the European approach places the European Union at the forefront of regulation in the field of artificial intelligence, as happened with the GDPR of 2016. In the end, given the European focus on the values underlying the rules, aimed at avoiding the systematic violation of privacy and individual freedoms as happens in the autocratic regimes, it seems that the EU and the US are destined to converge in this sector.

The legislative process relating to the proposed regulation is currently proceeding. The EP Committee on the Internal Market and Consumer Protection (IMCO) and the EP Committee on Civil Liberties, Justice and Home Affairs (LIBE) jointly released a draft report on the EC proposal in April 2022. The document includes proposed amendments to the original text proposed by the European Commission. The most significant changes proposed in the draft report include the ban on using artificial intelligence to implement predictive policing practices, the obligation to register AI-based technologies and greater alignment with the GDPR [27].

AI for Law Enforcement Applications

Referring to AI systems used by law enforcement agencies (LEAs), an important document has been elaborated by EUROPOL through the launch of the Accountability Principles for Artificial Intelligence – the so-called AP4AI project – in February 2022 [28]. This multidisciplinary project is led by EUROPOL and the Centre of Excellence in Terrorism, Resilience, Intelligence, and Organized Crime Research of Sheffield Hallam University (CENTRIC), and represents a practical toolkit to support AI accountability within the internal security domain. The project is specifically designed for security and justice practitioners and is aimed at preventing misuse of AI by internal security practitioners and safeguarding accountability. The document states the legislative lack in terms of accountable use of artificial intelligence within the internal security domain and addresses the challenge of creating a comprehensive global framework for the accountability of Policing, Security and Justice [28]. The AP4AI should be seen as a "living document" for the further creation of an AI Accountability Agreement (AAA) [28].

Accountability is considered by the AP4AI as the core value for AI deployments within internal security domains [28]. Accountability is defined as "the acknowledgement of an organisation's responsibility to act in accordance with the legitimate expectations of stakeholders and the acceptance of the consequences" [28]. Accountability should be taken also as a basis for creators in order to develop AI coherently with the legal use they are allowed to. AP4AI is innovative in aiming at creating a comprehensive legal framework that does not refer only to LEAs but to all the stakeholders (i.e. industry, non-governmental organisations, researchers, citizens) who take part or are affected by AI. Hence, while there is widespread knowledge of risk assessment within the internal security sector, there is scarce awareness of how the risk can be mitigated in practice and who are the actors involved. The report briefly focuses on EU efforts and then refers to other countries' legislation (that of the US in particular) to take it as a model approach for further legislation.

AP4AI consists of the introduction of 12 principles that together define requirements for achieving accountability in the use of AI, namely legality, universality, transparency, pluralism, independence, commitment to robust ev-

idence, enforceability and redress, compellability, explainability, constructiveness, conduct and learning organisation. Here, the 12 principles will not be revised in detail, but it will be provided with an overview of the main concepts to implement an accountable use of artificial intelligence. The document argues the necessity to encompass national approaches and provide enforcement mechanisms applicable to the entire AI system and associated actors. Within the scope of the document, covering the entire AI system means ensuring accountability in all the areas of the AI lifecycle – from design and development to concrete application in various contexts – and to all the stakeholders involved in artificial intelligence. In this regard, a multi-level collaboration within civil society, public and private organisations is necessary.

Given the speed of development of AI, the document recognises the exigence of having a regulatory assurance body that identifies the risks and can give advice to stakeholders and the government.

Human-Centric AI

The main vision characterising the EU approach to artificial intelligence is the creation of human-centric AI, which ensures it works for people and protects the fundamental rights of European citizens. The EC proposal for the Artificial Intelligence Act states that AI systems must always be under human control. However, no mention is made of the training of personnel responsible for supervising these systems, except that it has to be adequate for the task [17]. This lack of attention to this practical aspect has concerned the whole process of elaboration of the EU framework on AI.

The Ethics Guidelines for Trustworthy AI, published by the High-Level Expert Group on Artificial Intelligence in April 2019, promoted a set of 7 key requirements that AI systems should meet in order to be deemed trustworthy, including "human agency and oversight". According to this key requirement, AI systems should empower human beings, allowing them to make informed decisions and fostering their fundamental rights. At the same time, proper oversight mechanisms need to be ensured, which can be achieved through human-in-the-loop, human-on-the-loop, and human-in-command approaches [7]. With COM(2021)205 of 21 April 2021, the European Commission has accepted the content of the aforementioned document, but it has not taken steps to regulate the training issue. Article 14 on "Human Oversight" states that "high-risk" AI systems should be designed and developed in such a way that natural persons can effectively oversee their functioning [17]. For this purpose, appropriate human oversight measures should be identified by the provider of the system before its placing on the market or putting into service. Where appropriate, such measures should guarantee that the system is subject to in-built operational constraints that cannot be overridden by the system itself and is responsive to the human operator, and that the natural persons to whom human oversight has been assigned have the necessary competence, training and authority to carry out that fundamental role [17].

In general, the European Commission's proposal does not go beyond the recognition of the need for the training of the personnel responsible for controlling AI systems to be adequate for their supervision. Furthermore, it is not established whether this training should be regulated at European level or left to the competence of Member States.

As a comparative example, the US National Artificial Intelligence Initiative (NAAI) – which became law in January 2021 – focuses on training an AI-ready workforce. The US is investing in current and future generations of American workers through apprenticeships, skills programs, and education in science, technology, engineering, and mathematics (STEM), with an emphasis on information technology, to ensure that American workers are able to take full advantage of the opportunities of AI [29]. The lack of any legislative provision in this regard is particularly serious considering that AI systems may be responsible for the management of sensitive sectors and infrastructures within the EU territory. In recent years, the European Union has launched a set of initiatives aimed at developing knowledge of AI systems, but they have always been conceived as a support to the European digital transition rather than training the personnel who has to supervise the artificial intelligence implemented in critical areas or defence systems.

To start with, open to businesses, organisations and public administrations from all over the continent, the Digital Europe Programme (DIGITAL) is actually investing in learning and training opportunities – i.e., specialised masters and education programmes in key capacity areas – that will create new AI experts within the European Union [30]. Moreover, the Digital Education Action Plan (2021-2027) is a renewed European policy initiative to support the sustainable and effective adaptation of the education and training systems of EU Member States to the digital age. In order to enhance digital competences for the digital transformation of Europe, this policy aims to update the European digital skills framework to include AI and data skills [31]

The NATO Approach

One of the consequences of the lack of a European legislative provision on the training of personnel in charge of supervising the AI systems used is that in the defence sector it will continue to be carried out within the context of the Atlantic Alliance.

Over the last few years, NATO has paid particular attention to the so-called "emerging and disruptive technologies" (EDTs), endorsing a Coherent Implementation Strategy on EDTs in February 2021 [32]. Their importance for deterrence, defence and capability development was also recognised by the report entitled "NATO 2030: United for A New Era", which was commissioned by the Secretary General Jens Stoltenberg and published in November 2020 [33]. In particular, the Atlantic Alliance is developing specific plans for each of the following technological

areas: (a) data and computing; (b) artificial intelligence; (c) autonomy; (d) quantum-enabled technologies; (e) biotechnology and human enhancements; (f) hypersonic technologies; (g) space; (h) novel materials and manufacturing; and (i) energy and propulsion [34] [35]. Of all these dual-use technologies, artificial intelligence is known to be the most pervasive, especially when combined with others like big data, autonomy, or biotechnology. Due to its cross-cutting nature, AI will pose a broad set of international security challenges, affecting both traditional military capabilities and the realm of hybrid threats. This the reason why NATO has prioritized AI, identifying it as critical for its operations and a key enabler for modernisation and cooperation in the Atlantic Alliance.

At the Meeting of NATO Ministers of Defence held in Brussels in October 2021, the Allied Defence Ministers formally launched the NATO Artificial Intelligence Strategy [36] . Only a summary of the document has been made public. The strategy is meant to provide a common policy basis to support the adoption of AI systems among Member States in order to achieve NATO's three core tasks – collective defence, crisis management, and cooperative security. In particular, in accordance with international law and values of the Atlantic Alliance, the document established six basic principles of safe and responsible use of artificial intelligence in the field of defence: (a) lawfulness, (b) responsibility and accountability, (c) explainability and traceability, (d) reliability, (e) governability, and (f) bias mitigation [37] . All AI systems developed by NATO and its partners will have to comply with these principles, which are quite similar to the Ethical Principles for Artificial Intelligence adopted by the US Department of Defense in February 2020 – but with a plan to verify that the principles are followed [38]. By adopting a comparative approach, the EC's proposal for the Artificial Intelligence Act seems to be more restrictive for high-risk applications of AI, although its impact on defence will be indirect, as it do does not apply to the military domain. The Artificial Intelligence in Defence Action Plan – finalized by the European Defence Agency at the end of 2020 – shares more similarities with the NATO Artificial Intelligence Strategy, as it focuses on identifying modes and means for EU Member States to collaborate in the development of AI for their militaries [39].

While it emphasizes collaboration with private technology companies, academics and start-ups, the new strategy needs further refinement as AI would help NATO's military and civilian personnel interlink devices on different platforms, perform rigorous data analytics, and quicken response time in response to conventional or hybrid attacks. In this sense, the 2022 Strategic Concept will play a central role. The Strategic Concept is one of NATO's most important documents, as it informs military alliance's planning, resource allocation, and programming based on changes in the threat environment. The last version of the document has not been updated since 2010 [40]. But, as established at the 2021 NATO Summit in Brussels, the Atlantic Alliance will adopt its new Strategic Concept at the 2022 NATO Summit in Madrid, which will be held in 2022 [41].

By setting NATO's strategic direction for the next decade and beyond, the 2022 Strategic Concept should highlight the essential role of EDTs in collective defence, ensuring that the military alliance will continue to adapt to a changing world. However, the document should focus less on the emergence of new technologies and more on how NATO's military and civilian personnel use them – i.e., human training on artificial intelligence and other EDTs. In order to build greater digital capacity within the Atlantic Alliance, NATO institutions are aware of the importance of providing education, training and instruction to both military and civilian personnel in various areas consistent with the objectives and priorities identified by NATO's new security policies. During the 2021 NATO Summit, the Heads of State and Government of the thirty member countries decided to support internal cooperation and technological development through the creation of two new structures: the Defence Innovation Accelerator for the North Atlantic (DIANA) and the NATO Innovation Fund. Both bodies aim to consolidate the technological advantage within the Atlantic Alliance, considered precisely one of the foundations on which NATO's ability to dissuade and defend itself from potential external threats is based [42]. In this perspective, the 2022 Strategic Concept should establish deeper cooperation between NATO and the private sector, academia and non-governmental organisations, in order to provide new tools, strategies and practices to improve the knowledge, expertise and capability of personnel in the supervision of AI systems.

Conclusions

In the context of the global race for artificial intelligence, the European Union aims to strengthen its competitive position with respect to its main competitors – the United States and China – by anticipating them in the definition of a comprehensive regulatory framework on AI that could become a global standard. Indeed, acting as a tech regulator, the European Commission believes that the Artificial Intelligence Act will become an international point of reference for similar legislation, thanks to its balanced approach between fundamental rights protection and public security. Structured around a risk-based approach, the proposed regulation introduces tighter obligations in proportion to the potential impact of AI applications.

AI systems are efficient tools at the disposal of security practitioners and citizens but it is necessary to safeguard accountability and avoid misuse that can endanger national security and the respect for human rights. In this direction, the AP4AI Project has been established by Europol in February 2022.

The NATO approach was described to explore possible parallelisms between defence and civil security with regard to Artificial Intelligence preparedness of human operators. However, related documents are focused on the emergence of new technologies rather than on how military and civilian personnel use them.

The EC proposal for the Artificial Intelligence Act of April 2021 does not address the issue of human training on

AI. The proposal simply states that it has to be adequate for the task, without establishing minimum technical requirements or setting up specific training structures [17]. Therefore, this fundamental aspect will not be regulated in the European framework – meaning, the training of personnel responsible for supervising AI systems will be informally delegated to the structures and initiatives of the Member States.

The concerns about this rather significant gap should be expressed here, especially since the future EU framework on artificial intelligence aims to become an international standard and advises the need to promote new tools, strategies and practices to improve the knowledge, expertise and capability of personnel in the supervision of AI systems used for Security, Intelligence and Law Enforcement. From a long-term perspective, it is crucial that the EU – in the search for strategic autonomy – continues to allocate public resources for the development of an "AI made in Europe" and favours the creation of a European environment that stimulates private investment.

Disclaimer

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References

1 European Parliament, "European Parliament Resolution of 16 February 2017 with Recommendations to the Commission on Civil Law Rules on Robotics," 16 February 2017. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017IP0051&from=EN. [Accessed 31 May 2022] .

2 European Parliamentary Research Service (EPRS), "European Framework on Ethical Aspects of Artificial Intelligence, Robotics and Related Technologies," 28 September 2020. [Online]. Available: https://www.europarl.europa.eu/RegData/etudes/STUD/2020/654179/EPRS_STU(2020)654179_EN.pdf. [Accessed 3 June 2022].

3 European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Commitee of the Regions. Artificial Intelligence for Europe," 25 April 2018. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0237&rid=1. [Accessed 31 May 2022].

4 European Parliament and Council of the EU, "Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data and [...], and Repealing Directive 95/46/EC (General Data Protection Regulation)," 27 April 2016. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679. [Accessed 31 May 2022].

5 Official Journal of the European Union, "Consolidated Version of the Treaty on European Union - Title I Common Provisions - Article 2," Official Journal of the European Union, 26 October 2012. [Online]. Available: https://eur-lex.europa.eu/eli/treaty/teu_2012/art_2/oj. [Accessed 3 June 2022].

6 European Commission, "The European AI Alliance," European Commission, [Online]. Available: https://digital-strategy.ec.europa.eu/en/policies/european-ai-alliance. [Accessed 3 June 2022].

7 European Commission, "Ethics Guidelines for Trustworthy AI," European Commission, 8 April 2019. [Online]. Available: https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai. [Accessed 3 June 2022].

8 High-Level Expert Group on Artificial Intelligence (IA HLEG), "Policy and Investment Recommendations for Trustworthy AI," 26 June 2018. [Online]. Available: https://www.europarl.europa.eu/italy/resource/static/files/import/intelligenza_artificiale_30_aprile/ai-hleg_policy-and-investment-recommendations.pdf. [Accessed 3 June 2022].

9 European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Building Trust in Human-Centric Artificial Intelligence," European Commission, 8 April 2019. [Online]. Available: https://digital-strategy.ec.europa.eu/en/library/communication-building-trust-human-centric-artificial-intelligence. [Accessed 3 June 2022].

10 European Commission, "Assessment List for Trustworthy Artificial Intelligence (ALTAI) for Self-Assessment," European Commission, 17 July 2020. [Online]. Available: https://digital-strategy.ec.europa.eu/en/library/assessment-list-trustworthy-artificial-intelligence-altai-self-assessment. [Accessed 3 June 2022].

11 European Commission, "White Paper on Artificial Intelligence - A European Approach to Excellence and Trust," 19 February 2020. [Online]. Available: https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf. [Accessed 31 May 2022].

12 European Commission, "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A European Strategy for Data," 19 February 2020. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN. [Accessed 4 June 2022].

13 European Commission, "Commission Report on Safety and Liability Implications of AI, the Internet of Things and Robotics," European Commission, 19 February 2020. [Online]. Available: https://ec.europa.eu/info/publications/commission-report-safety-and-liability-implications-ai-internet-things-and-robotics-0_en. [Accessed 4 June 2022].

14 European Parliament and Council of the EU, "Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on Machinery, and amending Directive 95/16/EC (Recast)," 9 June 2020. [Online]. Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006L0042&from=EN. [Accessed 4 June 2022].

15 European Union Agency for Cybersecurity (ENISA), "Artificial Intelligence Cybersecurity Challenges," European Union Agency for Cybersecurity (ENISA), 15 December 2020. [Online]. Available: https://www.enisa.europa.eu/publications/artificial-intelligence-cybersecurity-challenges. [Accessed 3 June 2022].

16 European Commission, "Communication on Fostering a European Approach to Artificial Intelligence," European Commission, 21 April 2021. [Online]. Available: https://digital-strategy.ec.europa.eu/en/library/communication-fostering-european-approach-artificial-intelligence. [Accessed 4 June 2022].

17 European Commission, “Proposal for a Regulation of the European Parliament and of the Council Laying down Harmonized Rules on Artificial Intelligence (AI Act) and Amending Certain Union Legislative Acts,” 21 April 2021. [Online]. Available: https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF. [Accessed 31 May 2022].

18 European Parliamentary Research Service (EPRS), “Regulating Facial Recognition in the EU,” September 2021. [Online]. Available: https://www.europarl.europa.eu/RegData/etudes/IDAN/2021/698021/EPRS_IDA(2021)698021_EN.pdf. [Accessed 4 June 2022].

19 European Parliament, “Use of Artificial Intelligence by the Police: MEPs Oppose Mass Surveillance,” European Parliament, 6 October 2021. [Online]. Available: https://www.europarl.europa.eu/news/en/press-room/20210930IPR13925/use-of-artificial-intelligence-by-the-police-meps-oppose-mass-surveillance. [Accessed 4 June 2022].

20 European Commission, “Coordinated Plan on Artificial Intelligence 2021 Review,” European Commission, 21 April 2021. [Online]. Available: https://digital-strategy.ec.europa.eu/en/library/coordinated-plan-artificial-intelligence-2021-review. [Accessed 31 May 2022].

21 European Commission, “Communication from the Commission to the European Commission, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. Coordinated Plan on Artificial Intelligence,” 7 December 2018. [Online]. Available: https://eur-lex.europa.eu/resource.html?uri=cellar:22ee84bb-fa04-11e8-a96d-01aa75ed71a1.0002.02/DOC_1&format=PDF. [Accessed 31 May 2022].

22 Council of the EU, “Conclusions on the Coordinated Plan on Artificial Intelligence,” 11 Febrary 2019. [Online]. Available: https://data.consilium.europa.eu/doc/document/ST-6177-2019-INIT/en/pdf . [Accessed 31 May 2022].

23 European Commission, “A European Approach to Artificial Intelligence,” European Commission, 23 February 2022. [Online]. Available: https://digital-strategy.ec.europa.eu/en/news/commission-invest-eu292-million-digital-technologies-and-cybersecurity. [Accessed 3 June 2022].

24 Special Committee on Artificial Intelligence in a Digital Age (AIDA), “Report on Artificial Intelligence in a Digital Age,” 22 March 2022. [Online]. Available: https://www.europarl.europa.eu/doceo/document/A-9-2022-0088_EN.pdf. [Accessed 4 June 2022].

25 European Commission, “Digital in the EU-US Trade and Technology Council,” European Commission, 16 May 2022. [Online]. Available: https://digital-strategy.ec.europa.eu/en/policies/trade-and-technology-council. [Accessed 3 June 2022].

26 European Commission, “EU-US Trade and Technology Council: Strengthening our Renewed Partnership in Turbulent Times,” European Commission, 16 May 2022. [Online]. Available: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3034. [Accessed 3 June 2022].

27 EP Committee on the Internal Market and Consumer Protection and EP Committee on Civil Liberties, Justice and Home Affairs, “Draft Report on Artificial Intelligence Act,” 20 April 2022. [Online]. Available: https://www.europarl.europa.eu/doceo/document/CJ40-PR-731563_EN.pdf. [Accessed 17 June 2022].

28 European Union Agency for Law Enforcement Cooperation (Europol), “Accountability Principles for Artificial Intelligence (AP4AI) in the Internal Security Domain,” 22 February 2022. [Online]. Available: https://www.europol.europa.eu/cms/sites/default/files/documents/Accountability_Principles_for_Artificial_Intelligence_AP4AI_in_the_Internet_Security_Domain.pdf. [Accessed 15 June 2022].

29 US White House, “American Artificial Intelligence Initiative: Year One Annual Report,” February 2021. [Online]. Available: https://trumpwhitehouse.archives.gov/wp-content/uploads/2020/02/American-AI-Initiative-One-Year-Annual-Report.pdf. [Accessed 18 June 2022].

30 European Parliament and Council of the EU, “Regulation (EU) 2021/694 of the European Parliament and of the Council of 29 April 2021 Establishing the Digital Europe Programme and Repealing Decision (EU) 2015/2240,” 29 April 2021. [Online]. Available: https://eur-lex.europa.eu/resource.html?uri=cellar:321918fd-6af4-11e8-9483-01aa75ed71a1.0003.03/DOC_1&format=PDF. [Accessed 15 June 2022].

31 European Commission, “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Digital Education Action Plan 2021-2027,” European Commission, 30 September 2020. [Online]. Available: https://education.ec.europa.eu/focus-topics/digital-education/about/digital-education-action-plan. [Accessed 15 June 2022].

32 North Atlantic Treaty Organization, “New Focus on Emerging and Disruptive Technologies Helps Prepare NATO for the Future,” North Atlantic Treaty Organization, 3 March 2021. [Online]. Available: https://www.nato.int/cps/en/natohq/news_181901.htm . [Accessed 15 June 2022].

33 Reflection Group (NATO), "NATO 2030: United for a New Era," 25 November 2020. [Online]. Available: https://www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf . [Accessed 15 June 2022].

34 North Atlantic Treaty Organization, "Emerging and Disruptive Technologies," North Atlantic Treaty Organization, 7 April 2022. [Online]. Available: https://www.nato.int/cps/en/natohq/topics_184303.htm. [Accessed 15 June 2022].

35 NATO Science & Technology Organization, "Science & Technology Trends 2020-2040. Exploring the S&T Edge," March 2020. [Online]. Available: https://www.nato.int/nato_static_fl2014/assets/pdf/2020/4/pdf/190422-ST_Tech_Trends_Report_2020-2040.pdf. [Accessed 15 June 2022].

36 North Atlantic Treaty Organization, "NATO Releases First-Ever Strategy for Artificial Intelligence," North Atlantic Treaty Organization, 22 October 2021. [Online]. Available: https://www.nato.int/cps/en/natohq/news_187934.htm . [Accessed 15 June 2022].

37 North Atlantic Treaty Organization, "Summary of the NATO Artificial Intelligence Strategy," North Atlantic Treaty Organization, 22 October 2022. [Online]. Available: https://www.nato.int/cps/en/natohq/official_texts_187617.htm. [Accessed 15 June 2022].

38 US Department of Defense, "DOD Adopts Ethical Principles for Artificial Intelligence," US Department of Defense, 24 February 2020. [Online]. Available: https://www.defense.gov/News/Releases/Release/Article/2091996/dod-adopts-ethical-principles-for-artificial-intelligence/. [Accessed 15 June 2022].

39 European Defence Agency (EDA), "Annual Report 2020," 30 May 2021. [Online]. Available: https://eda.europa.eu/docs/default-source/eda-annual-reports/eda-annual-report-2020.pdf. [Accessed 15 June 2022].

40 North Atlantic Treaty Organization, "2010 Strategic Concept," 20 November 2010. [Online]. Available: https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf . [Accessed 15 June 2022].

41 North Atlantic Treaty Organization, "2022 NATO Summit," North Atlantic Treaty Organization, 3 June 2022. [Online]. Available: https://www.nato.int/cps/en/natohq/news_196144.htm. [Accessed 15 June 2022].

42 North Atlantic Treaty Organization, "Brussels Summit Communiqué," North Atlantic Treaty Organization, 14 June 2021. [Online]. Available: https://www.nato.int/cps/en/natohq/news_185000.htm. [Accessed 15 June 2022].

International Criminal Justice and the War in Ukraine

by Jannis Figura*

Abstract

The international crimes committed during Russian invasion of Ukraine can be prosecuted under the current international law framework except for the crime of aggression. Prosecution of the latter is the only judicial way to prosecute the Russian leadership. The International Criminal Court does not have jurisdiction over the crime of aggression in Ukraine. Furthermore, the International Court of Justice ruled that third countries cannot prosecute other senior government officials. This only leaves Russian and Ukrainian courts as potentially legitimate entities that can prosecute Russian leadership, as both countries are directly involved in the conflict. There is also the idea of establishing a new special international tribunal for the crime of aggression in Ukraine. However, this court brings huge problems for international criminal justice, such as selectivity criticism and resource problems. This paper favours a prosecution of Russian leadership in Ukrainian courts. Even though it is unlikely that Russian leadership will actually be in court, their prosecution will marginalise their political reputation if many countries accept this ruling. This is far from ideal but the most realistic option. The effect depends on the support of the international community.

1. Introduction

"I have decided to conduct a special military operation", these were the words Vladimir Putin used when he announced on the 24th of February 2022 that Russia's army would launch an attack against Ukrainian forces to demilitarise the country and replace the government in Kyiv (Osborn & Nikolskaya, 2022). Several intelligence services, especially from the United States, have sent early warnings of Russian troop concentration close to Ukraine since April 2021. Beyond the Horizon ISSG researchers Coban et al. (2022) already warned a month before the invasion of the high risk that Russia was preparing for a full-scale war against Ukraine. After the invasion date on the 24th of February, the UN quickly adopted a resolution on the 2nd of March 2022, rejecting Russia's invasion and calling for an immediate troop withdrawal with an overwhelming 141 to 5 vote in the UN General Assembly (UN, 2022a).

For the majority of national governments around the world, it was clear that Russia's attack was a direct violation of Article 2(4) of the UN Charter, which states that: "All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations" (UN, 1945). The gravity of the attack and its illegal nature caused many national governments, NGOs, and international institutions to demand legal investigations into the invasion. The goal is to hold the perpetrators and planners of the attack accountable. This call was further amplified over the past months when it became clear that Russian forces purposefully targeted civilian infrastructure and non-combatants, including children and women (Speri, 2022). The following sections outline the legal options to investigate the Russian invasion and committed crimes. These options are also assessed on their effectiveness and implications for international criminal justice.

2. International criminal law and justice

International criminal law (ICL) is a complex legal discipline. Unlike, for instance, national tax or family law, it is not enshrined in a singular codification system. Instead, it consists of several components, such as international law, comparative criminal law, national criminal law and human rights law. Arguably the Rome Statute of 1998 is the most extensive form of international criminal law codification (Bassiouni, 2014, p.1).

In general, ICL prescribes particular categories of conduct, such as war crimes or crimes against humanity, and holds persons "who engage in such conduct criminally liable" (Cassese & Gaeta, 2013, p.3). Initially, ICL only consisted of war crimes, based on the Hague Conventions of 1899 and 1907, focusing on the conduct of war, and the Geneva Conventions between 1864 and 1949, concerning the humanitarian treatment in war (Fruchterman Jr., 1983). After World War II, the Nuremberg and Tokyo trials recognised new classes of international criminality, namely the crimes against humanity and crimes against peace. Recognition and codification of genocide followed as a distinct crime in 1948 and torture during the 1980s (Cassese & Gaeta, 2013).

The end of the Cold War marked a new era in international criminal law when the UN Security Council established the International Criminal Tribunal for the former Yugoslavia (ICTY) and the International Criminal Tribunal for Rwanda (ICTR) in 1993 and 1994. Then, in 2002 the International Criminal Court (ICC) was established in the Hague, while its founding treaty, the Rome Statute, was already signed in 1998. The ICC is the world's first permanent treaty-based court that can investigate and prosecute individuals for the gravest crimes of concern to the international community (Ellis, 2002). As of December 2022, 123 of the 193 UN member states are State Parties to the Rome Statute (ICC, n.d.-a).

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Generally, the ICC's jurisdiction is bound to three trigger mechanisms that can activate investigations by the court. Firstly, signatory states of the Rome Statute can refer situations to the court. Secondly, the UN Security Council can refer situations to the court to extend its jurisdiction to non-signatory states. Lastly, the ICC's prosecutor may initiate an investigation – proprio motu – on his own initiative (ICC, 2011, Article 13(a-c)). The ICC can prosecute individuals for crimes against humanity, war crimes, genocide, and since 2018, the crime of aggression (Akande & Tzanakopoulos, 2018).

With the establishment of the court came high expectations for international criminal justice. International criminal justice refers to the desire to hold perpetrators of severe international crimes accountable through the application of international criminal law. Throughout history, perpetrators of these grave crimes frequently escaped punishment, either because they enjoyed immunity or because national borders limited the jurisdiction of courts to hold these individuals accountable. Consequently, the overall goal of international criminal justice is ending impunity (Rodman, 2021).

Another entity besides the ICC and special tribunals can pursue international criminal justice, namely national courts. Especially after the establishment of the ICC, several countries adopted aspects of international criminal law in their national legislation. This allows them to prosecute perpetrators of severe international crimes in national courts. In the most extreme forms, some countries adopted universal jurisdiction (UJ) for certain crimes. Universal jurisdiction provides national courts with jurisdiction over crimes against international law, even when the crimes did not occur on the host state's territory, and neither the victim nor perpetrator are nationals of that host state. Therefore, this principle enables national courts to address grave crimes without personal or territorial connection to the host state (ECCHR, n.d.). The concept gained international attention again when several national courts, such as those in France, Germany, or Sweden, prosecuted perpetrators for core international crimes during the War in Syria in the mid-2010s (Triscone, 2021). The following section outlines the options to pursue international criminal justice in Ukraine.

3. International criminal justice options to investigate the Russian invasion of Ukraine

a. The International Criminal Court (ICC)

Soon after the invasion on the 24th of February, ICC Prosecutor Karim A.A. Khan announced that he would seek authorisation to open investigations into the situation in Ukraine. The fastest approach is State Party referral, as this simplifies the authorisation process of the ICC, compared to proprio motu investigations by the prosecutor. Already on the 2nd of March 2022, 40 countries referred the situation in Ukraine to the court. On the same day, Khan announced that he would open investigations into possible war crimes, crimes against humanity, and genocide on the territory of Ukraine committed by any individual since the 21st of November 2013. The Ukrainian government has already accepted ICC jurisdiction during the Russian annexation of Crimea. This makes the ICC's jurisdiction over the three previously mentioned crimes legitimate, even though Ukraine is no signatory of the Rome Statute (ICC, n.d.-b).

Nonetheless, the ICC cannot prosecute individuals for the crime of aggression in the Ukraine War. This crime is distinct from the other three crimes, as it exclusively applies to political or military leaders and not, for example, lower-ranked soldiers committing war crimes. It is strictly tied to "a person in a position effectively to exercise control over or to direct the political or military action of a State" (ICC, 2011, Article 8 bis (1)). Contrary to the other three core crimes, the ICC's jurisdiction over the crime of aggression is bound to the territory of State Parties to the Rome Statute accepting ICC jurisdiction over this crime or UN Security Council referral. Ukraine and Russia are not ICC members, and Russia has veto power in the Security Council. Consequently, the ICC will not be able to prosecute Russian senior government officials such as President Putin, Foreign Minister Sergey Lavrov, or high-ranking military officials for the crime of aggression.

ICC Prosecutor Karim A.A. Khan announces investigation into the invasion on the 2nd of March 2022. Retrieved from Beeri & Baruch (2022).

The ICC will not gain jurisdiction over this crime for the Ukraine War in the future as it is inapplicable retrospectively. This is hugely problematic as the crime of aggression is considered "the mother crime" that enabled the following potential war crimes, genocide, or crimes against humanity later during the Ukraine War (Speri, 2022, para. 9). Its non-prosecution would be a grave blow to international criminal justice. As international law specialist Philippe Sands said: "My feeling is that if this is not prosecuted as a crime of aggression, then the crime of aggression is basically dead" (Speri, 2022, para. 18). Thus, an examination of alternatives to the ICC is required to unfold the full potential of international criminal justice.

- ◊ The ICC investigates crimes against humanity, war crimes, and genocide in Ukraine
- ◊ The court does not have jurisdiction over the crime of aggression in Ukraine, which is bound to ICC member states or UN Security Council referral
- ◊ The crime of aggression is the core crime that enabled the following crimes
- ◊ It is the only crime that can be realistically linked to the Russian leadership and used to hold senior government officials accountable

b. Joint Investigation Team (Eurojust)

In April 2022, the ICC also decided to become a member of the Joint Investigation Team (JIT) that Eurojust established to investigate potential international crimes in Ukraine. This is the first time that the court joined a JIT in its history. Ukraine, Lithuania, Poland, Estonia, Latvia, Slovakia, and Romania are also members of the JIT. Joint Investigation Teams under the Eurojust framework enable national judicial systems, law enforcement units, and intelligence services to work together directly. This close coordination of national agencies is a unique mechanism that simplifies communication between those services. Concerning Ukraine, the JIT is crucial to manage the enormous amounts of war crime evidence and storing this data safely outside Ukraine. The national agencies are the primary prosecutors of these crimes, but the ICC directly contributes to the investigations and will resume control over prosecutions where necessary via the complementarity principle (Crawford, 2022). Ukraine's Prosecutor General's Office alone would be overloaded without foreign help as it cannot prosecute all crimes on its own due to limited resources. As of the 6th of December 2022, the Office registered 50.448 war crimes by Russian military and political representatives (Justice Info, 2022). The Joint Investigation Team will probably focus on crimes against humanity, war crimes, and genocide, but not the crime of aggression. The following section will explain the problems that national courts prosecuting these crimes have.

c. National courts and universal jurisdiction

National courts are the third option to prosecute grave crimes during the Ukraine War – also those that did not join the JIT. Previous sections already explained the concept of universal jurisdiction. It is noteworthy that "166 States have defined at least one of the four crimes upon which universal jurisdiction can be exercised – war crimes, crimes against humanity, genocide, and torture – as crimes in their national law" (International Justice Resource Center, n.d., para. 5). Significantly, the crime of aggression is not included. Furthermore, only a few countries established specialised units capable of prosecuting these crimes. Thus, even though many countries can investigate these crimes theoretically, it does not mean that they do so in reality. The application of the concept is still under debate (UN, 2022b).

This paper has shown so far that the imposition of international criminal law concerning war crimes, crimes against humanity, and genocide is not the main problem of investigations in the Ukraine War. There are large amounts of evidence, Russian prisoners of war, witnesses to identify them, and entities to conduct the prosecutions, which are the ICC and national courts. Consequently, it is expectable that many more Russians will be convicted for these crimes in the upcoming months and years (Polityuk & Balmforth, 2022). However, these are only the lower ranks of possible perpetrators.

The main problem from an international criminal justice perspective is the crime of aggression to hold the Russian government officials accountable, who started this war in the first place. It is unlikely that the other three crimes can be linked to these senior officials to hold them accountable. Such orders are secret and difficult to obtain. The crime of aggression is the only mechanism that can create a link, as publicly available information is utilisable to build a case and create accountability (Colangelo, 2022). For instance, President Putin publicly ordered the attack and Russia's general staff planned it. These actions are known and constitute the crime of aggression themselves, thereby automatically creating accountability. Therefore, the evidence for this crime is not the problem, but rather finding an entity that can legally conduct such an investigation. The ICC is not allowed to prosecute the crime of aggression in Ukraine as explained before.

Rulings and opinions of the International Court of Justice (ICJ) serve as primary sources of international law. Retrieved from Foley Hoag (n.d.).

The crime of aggression is by definition a leadership crime, and national court's jurisdiction over this crime is questionable. The International Court of Justice (ICJ) has ruled in its Yerodia decision that the immunity of senior government officials protects them from war crimes or crimes against humanity prosecutions by other countries (Trahan, 2022). In 2002, the ICJ ruled with a 10 to 6 vote that a Belgium

arrest warrant based on universal jurisdiction for a Congolese politician involved in core international crimes was unlawful. The ICJ's Yerodia decision was based on customary international law and strictly tight to the scope of the case (ICJ, n.d.). Thus, verdicts on the crime of aggression by Russian or Ukrainian courts, which are directly involved in the conflict, would require a new ICJ ruling due to the different jurisdictional circumstances and nature of the crime compared to the Yerodia case. Both countries include the crime of aggression in their national criminal code. In Russia, it is punishable by up to 20 years in prison (Federation Council, 1996, Article 353). In Ukraine, the same crime is punishable by up to 12 years imprisonment (Parliament of Ukraine, 2001, Article 437).

So far, it is unknown whether national courts' ruling over the crime of aggression is lawful when the host state is involved in the conflict. It did not happen in history so far. Since the Nuremberg and Tokyo trials, which were international courts, the crime of aggression has not been prosecuted. This leads to the assumption that international courts are the only entities possessing legitimate jurisdiction over the crime of aggression (Trahan, 2022). It is further supported by the par in parem non habet imperium principle in international law, "an equal has no power over an equal (Van Schaak, 2012, p.149). The principle stipulates that sovereign states cannot exercise jurisdiction over other sovereign states. Therefore, scholars such as Van Schaak (2012) advocated that the ICC should have the sole privilege of exercising de facto primacy over the crime of aggression vis-à-vis domestic courts (p.133). Consequently, several international lawyers proposed the establishment of a special international tribunal focusing on the crime of aggression in the Ukraine War since the ICC does not have jurisdiction over this crime in Ukraine's territory (Scheffer, 2022; Hathaway, 2022). This would help circumvent the difficulties, as explained in this section of the paper. However, the idea of a special tribunal also brings new problems that will be analysed in the next and final part of the analysis.

- ◊ Universal Jurisdiction enables third countries to prosecute Russians for war crimes, crimes against humanity, and genocide
- ◊ The crime of aggression cannot be enforced by a third country over Russian leadership due to an ICJ ruling
- ◊ Potentially, Russian and Ukrainian courts are the only existing entities that can prosecute Russian leadership since both countries are directly involved in the conflict
- ◊ Arguably, only international courts have jurisdiction over the crime of aggression
- ◊ Russian and Ukrainian courts' ruling over the crime of aggression would require a new ICJ ruling to confirm their legality

d. A new international tribunal for the crime of aggression in Ukraine

The idea to establish a special international tribunal for the Ukraine War re-emerged when the Ukrainian Army partially pushed back Russian forces in September 2022. Proponents of the special tribunal suggest that the government of Ukraine and the United Nations should work together to create this court. This would combine the benefits of using the Ukrainian criminal code as the legal basis while using the international aspect of the UN to promote the court's legitimacy since it is not a national court ruling over the crime of aggression but an international court (Hathaway, 2022). This design addresses the previously mentioned problems of the crime of aggression. Additionally, widespread support among UN member states would counter potential Western-interest-criticism. Consequently, establishing this new special tribunal seems a natural path to follow.

Nevertheless, the court would also come with mainly two issues. Firstly, it will directly compete with existing judicial systems for resources, especially the ICC due to their similarities. This will be the case even when the new court will solely focus on prosecuting the Russian leadership for the crime of aggression, which the ICC cannot do. ICC Prosecutor Khan already indicated that the ICC would need more resources in 2023 to deal with the high number of cases. Furthermore, a new special tribunal may reduce international support for legitimising the ICC because it might be perceived as ineffective since it cannot deal with the situation in Ukraine. It is questionable whether donors will provide the ICC with enough money if they finance a new costly tribunal as well. Additionally, the court would require new judges, investigators, facilities, and prosecutors. In other words, it is an expensive enterprise (Heller, 2022).

Secondly, and most importantly, besides the monetary and personnel problems, the special tribunal would send a wrong message of selectivity in international criminal justice. Some non-Western countries already complained that they are often disproportionately the target of international criminal justice investigations. They argue that it is often used as a new tool of Western power politics and only applied when it is in the interest of Western states (Vilmer, 2016). For instance, it raises the question of why a special tribunal is established for the Ukraine War but not the Iraq invasion in 2003 to hold the British and American governments accountable who undeniably committed the crime of aggression then (Hagan et al., 2015). It would also suggest that following crimes of aggression in the future would require the establishment of new tribunals. Generally, some observers believe that European

countries seem to excessively focus on Russian aggression and forget about other ongoing conflicts in the world that would require their support for international criminal justice. A new international court would support this criticism (Dworkin, 2022).

Instead, it would be much easier if countries use existing structures to prosecute the crime of aggression. In other words, signing the Rome Statute and accepting ICC jurisdiction over the crime of aggression in their territory. As Heller (2022, para. 18) said, "If certain powerful states had not insisted on excluding non-state parties from the crime of aggression – the US, UK, and France foremost among them – […] there would be no need now to create a brand-new ad hoc tribunal for one type of international crime and one specific invasion." Consequently, the difficult situation now is also the fault of Western countries as they feared being held accountable for potential misconduct themselves by the ICC. The war in Ukraine should serve as a lesson that strengthening the ICC is in the interest of the entire world community to increase stability. A new special court for Ukraine would probably never get rid of Western interest criticism. As Dworkin (2022) stated, "Ultimately, international courts tend to reflect the political dynamics of the world rather than alter it. […] Many countries may disapprove of Russia's actions, but none outside the West and its closest Asian allies are prepared to make this the central reference point of their foreign policy (para.10).

- ◊ A new international court would overcome the par in parem non habet imperium principle in international law and have jurisdiction over the crime of aggression
- ◊ The court would compete with existing international criminal law systems for resources and personnel
- ◊ It could inflame criticism that international criminal law is a tool of Western-oriented power politics
- ◊ The establishment is costly and would suggest that new tribunals are necessary for future conflicts
- ◊ The ICC can already prosecute the crime of aggression
- ◊ Major Western countries denied the ICC jurisdiction over the crime on their territory because they feared being prosecuted themselves
- ◊ If more countries had granted the court jurisdiction over the crime, then this dilemma would not exist in the first place

4. Implications for international criminal justice and the war in Ukraine

Crimes against humanity, genocide, and war crimes are well covered under the current international law framework. National courts, such as those in Ukraine or others applying universal jurisdiction, can lawfully prosecute them. Additionally, the ICC can support these efforts via the principle of complementarity. Thus, there are sufficient indicators that international criminal justice will be achieved to some extent for these three crimes. However, all three are only realistically practicable for prosecutions of lower-ranked soldiers, not senior Russian government officials and military officers. Yet, they are prosecutable for the crime of aggression based on publicly available evidence, such as President Putin's order to invade Ukraine. Nonetheless, it is unapparent which entity can lawfully conduct these trials. The crime of aggression was only prosecuted during the Nuremberg and Tokyo trials, but not since then. Hence, there are well-reasoned debates on how to manage this dilemma.

Ideally, the ICC prosecutes the crime of aggression as it has legitimate jurisdiction over the crime due to its international nature. However, since it has no jurisdiction over this crime in Ukraine, it is indispensable to examine alternatives. This paper has outlined that some national legislations include the crime of aggression and could theoretically prosecute it, including Russia and Ukraine. It is unresolved yet, whether involved countries can do it since they are potentially legitimate stakeholders, but such a scenario has not happened yet. Thus, the situation in Ukraine is unique in this regard, and it will show how the crime of aggression is managed in the future. This paper favours an ICJ ruling that confirms that defending countries (victims) against the crime of aggression and the ICC are the only legitimate entities to rule over this crime in a conflict and can lawfully issue arrest warrants for perpetrators. The ICJ has already ruled the Russian attack unlawful.

The situation at the moment only leaves Russian and Ukrainian courts as existing and potential legitimate entities. It is unlikely that Russian courts will conduct these prosecutions if there is no regime change in the country. This only leaves Ukrainian courts as possible venues to prosecute Russian senior officials for the crime of aggression as legitimate entities. It is questionable whether the International Court of Justice will accept their ruling. The court has the final say in this regard, as its rulings and opinion serve as primary sources of international law. This can only be ascertained when the time has come.

The only other possibility is the establishment of a new international tribunal, based on Ukrainian law, focusing solely on the crime of aggression in the Ukraine War and supported by the international community. However, among resource problems and competition with the ICC, this court would also bring severe political complications. Mainly Western-oriented governments would likely support such an institution but not more. There is already widespread criticism that international criminal justice is a selective tool of the West whenever its interests are at stake. This is also partially because Western countries and their allies are the major promoters and donors of the international criminal justice system. Whether this criticism is true or false is subject to its own debate. Nonetheless, the new tribunal would inflame this perception and may damage the support for international criminal justice in the long run.

In contrast, it is far more likely that there is widespread acceptance among the international community that Ukraine has legitimate jurisdiction over the crime of aggression as the defender in this war. Therefore, this paper favours prosecuting the crime of aggression in Ukrainian courts. Whether it is actually possible to bring Russian senior officials to court is a different discussion. Potentially, accepting Ukraine as an EU member could enhance the gravity of Ukrainian court decisions. If the country issues European Arrest Warrants (EAWs) for Russian officials, they could not enter EU territory anymore, where the crime of aggression is punishable. EU countries are required to obey EAWs. This would marginalise the efficiency of Russian leadership in the future and promote international criminal justice without sentencing these officials in court. This outcome is not ideal, but perhaps more realistic. The legitimacy of the Ukrainian courts' ruling would still depend on the International Court of Justice's decision.

Lastly, the situation has shown that if more countries had supported the ICC, such discussions would have been unnecessary. More countries should become parties to the Rome Statute to increase the court's jurisdictional area, which brings the mutual benefit of promoting international stability. Furthermore, especially Western countries can counter the criticism of double standards by promoting the court's jurisdiction over the crime of aggression within their territory. This requires specific acceptance, even by ICC member states. The Ukraine War will either have a positive or negative impact on international criminal justice. No matter the outcome of the war or the management of international crimes in the conflict, the Ukraine War will have an extensive impact and shape the development of international criminal justice for the foreseeable future.

References

Akande, D., & Tzanakopoulos, A. (2018). Treaty law and ICC jurisdiction over the crime of aggression. European Journal of International Law, 29(3), 939-959. https://doi.org/10.1093/ejil/chy059

Bassiouni, M.C. (2014). Introduction to international criminal law (2nd ed.). Brill Nijhoff. https://brill.com/view/title/24998

Beeri, O., & Baruch, P.S. (2022, April 11). Investigation of Russia's crimes in Ukraine: A turning point for the International Criminal Court? INSS. https://www.inss.org.il/publication/war-crimes-investigation/

Cassese, A., & Gaeta, P. (2013). Cassese's international criminal law (3rd ed.). Oxford University Press. https://doi.org/10.1093/he/9780199694921.001.0001

Coban, S., Suzen, H., Snigyr, O., Sultan, O., & Yuksel, S. (2022, January 20). Escalation over Ukraine in face of Russian demands for an uncontested sphere of influence in former Soviet space. Beyond the Horizon ISSG. https://behorizon.org/escalation-over-ukraine-in-face-of-russian-demands-for-an-uncontested-sphere-of-influence-in-former-soviet-space/

Colangelo, A.J. (2022, April 3). Putin can be prosecuted for crimes of aggression – but likely not any time soon. The Hill. https://thehill.com/opinion/international/596894-putin-can-be-prosecuted-for-crimes-of-aggression-but-likely-not-any/

Crawford, J. (2022, May 5). Ukraine, ICC and Eurojust: How will that work. Justiceinfo.net. https://www.justiceinfo.net/en/91763-ukraine-icc-eurojust-how-will-that-work.html

Dworkin, A. (2022, December 19). Aggression on trial: The tricky path towards prosecuting Russian war leaders. European Council on Foreign Relations. https://ecfr.eu/article/aggression-on-trial-the-tricky-path-towards-prosecuting-russian-war-leaders/

ECCHR. (n.d.). Term: Universal jurisdiction. https://www.ecchr.eu/en/glossary/universal-jurisdiction/

Ellis, M.S. (2002). The International Criminal Court and its implications for domestic law and national capacity building. Florida Journal of International Law, 15(2), 215-242. https://scholarship.law.ufl.edu/fjil/vol15/iss2/2

Federation Council. (1996, June 5). The criminal code of the Russian federation. https://www.wipo.int/edocs/lexdocs/laws/en/ru/ru080en.pdf

Foley Hoag. (n.d.). Practice: The International Court of Justice. https://foleyhoag.com/industries-practices/international-litigation-arbitration/international-court-of-justice/

Fruchterman Jr., R.L. (1983). Enforcement: The difference between the laws of war and the Geneva conventions. Georgia Journal of International and Comparative Law, 13, 303-304. https://digitalcommons.law.uga.edu/gjicl/vol13/iss4/18

Hagan, J., Kaiser, J., & Hanson, A. (2015). Iraq and the crimes of aggressive war: The legal cynicism of criminal militarism. Cambridge University Press. https://doi.org/10.1017/CBO9781316221693

Hathaway, O.A. (2022, September 20). The case for creating an international tribunal to prosecute the crime of aggression against Ukraine (part I). Just Security. https://www.justsecurity.org/83117/the-case-for-creating-an-international-tribunal-to-prosecute-the-crime-of-aggression-against-ukraine/

Heller, K.J. (2022, March 7). Creating a special tribunal for aggression against Ukraine is a bad idea. Opinio Juris. https://opiniojuris.org/2022/03/07/creating-a-special-tribunal-for-aggression-against-ukraine-is-a-bad-idea/

ICC. (n.d.-a). The state parties to the Rome Statute. https://asp.icc-cpi.int/states-parties#:~:text=123%20countries%20are%20States%20Parties,of%20the%20International%20Criminal%20Court.

ICC. (n.d.-b). Ukraine: Situation in Ukraine. https://www.icc-cpi.int/ukraine

ICC. (2011). Rome Statute of the International Criminal Court. https://www.icc-cpi.int/resource-library/documents/rs-eng.pdf

ICJ. (n.d.). Arrest warrant of 11 April 2000 (Democratic Republic of the Congo v. Belgium). https://www.icj-cij.org/en/case/121

International Justice Resource Center. (n.d.). Universal jurisdiction. https://ijrcenter.org/cases-before-national-courts/domestic-exercise-of-universal-jurisdiction/#:~:text=at%2012.,See%20id.

Justice Info. (2022, December 6). Map of war crimes trials in Ukraine. https://www.justiceinfo.net/en/109654-map-of-war-crimes-trials-in-ukraine.html

Osborn, A., & Nikolskaya, P. (2022, February 24). Russia's Putin authorises "Special military operation" against Ukraine. Reuters. https://www.reuters.com/world/europe/russias-putin-authorises-military-operations-donbass-domestic-media-2022-02-24/

Parliament of Ukraine. (2001, September 1). Criminal code of the republic of Ukraine. https://sherloc.unodc.org/cld/uploads/res/document/ukr/2001/criminal-code-of-the-republic-of-ukraine-en_html/Ukraine_Criminal_Code_as_of_2010_EN.pdf

Polityuk, P., & Balmforth, T. (2022, May 13). Ukraine begins first war crimes trial of Russian soldier. Reuters. https://www.reuters.com/world/europe/ukrainian-court-hear-first-war-crimes-case-against-russian-soldier-2022-05-13/

Rodman, K.A. (2021). International criminal justice. Oxford Bibliographies. https://www.oxfordbibliographies.com/display/document/obo-9780199756223/obo-9780199756223-0196.xml

Scheffer, D. (2022, October 25). Forging a cooperative relationship between International Criminal Court and a special tribunal for aggression against Ukraine. Just Security. https://www.justsecurity.org/83757/forging-a-cooperative-relationship-between-intl-crim-court-and-a-special-tribunal-for-russian-aggression-against-ukraine/

Speri, A. (2022, October 8). The mother crime: Will Putin face prosecution for the crime of aggression in Ukraine? The Intercept. https://theintercept.com/2022/10/08/russia-putin-ukraine-war-crimes-accountability/

Trahan, J. (2022, April 4). The need to re-examine the crime of aggression's jurisdictional regime. Just Security. https://www.justsecurity.org/80951/the-need-to-reexamine-the-crime-of-aggressions-jurisdictional-regime/

Triscone, J. (2021, September 6). Universal jurisdiction, the only hope prosecuting international crimes committed in Syria? Trial International. https://trialinternational.org/latest-post/universal-jurisdiction-the-only-hope-for-prosecuting-international-crimes-committed-in-syria/

UN. (1945). Charter of the United Nations. https://www.icj-cij.org/en/charter-of-the-united-nations

UN. (2022a, March 2). General Assembly resolution demands end to Russian offensive in Ukraine. UN News. https://news.un.org/en/story/2022/03/1113152

UN. (2022b, October 12). Speakers disagree on how, when, where universal jurisdiction should be engaged, as sixth committee takes up report on principle. https://press.un.org/en/2022/gal3662.doc.htm

Van Schaak, B. (2012). Par in parem imperium non habet complementarity and the crime of aggression. Journal of International Criminal Justice, 10(1), 133-164. https://doi.org/10.1093/jicj/mqs004

Vilmer, J. (2016). The African Union and the International Criminal Court: Counteracting the crisis. International Affairs, 92(6), 1319–1342. https://doi.org/10.1111/1468-2346.12747

Two Major Earthquakes Hit Türkiye and Syria
An Evaluation of Crisis Management Efforts

by Onur Sultan* and Jannis Figura**

1. Introduction

On February 6, 2023, a series of earthquakes struck southern Türkiye and northern Syria. An earthquake with a magnitude of 7.8 mww and with an epicentre located 34 kilometres to the west of the city of Gaziantep occurred at 04:17 local time.[1] An aftershock with magnitude of 6.7 followed just 11 minutes after. In a fashion that also surprised the scientists, another earthquake with a magnitude of 7.5 mww with its epicentre located 4 km to the southeast of the Ekinözü district of Kahramanmaraş occurred at 13:24 local time.[2] This latter was also followed by two aftershocks with about 6mww in magnitude, at 13:35 and 15:02, respectively.[3] According to Kandilli Observatory and Earthquake Research Institute data, from the time the first earthquake occurred until 11 February 2023 08:00, within a radius of 350 km 6141 aftershocks occurred, of which 391 had a magnitude above 4.0 (see Figure 1).[4]

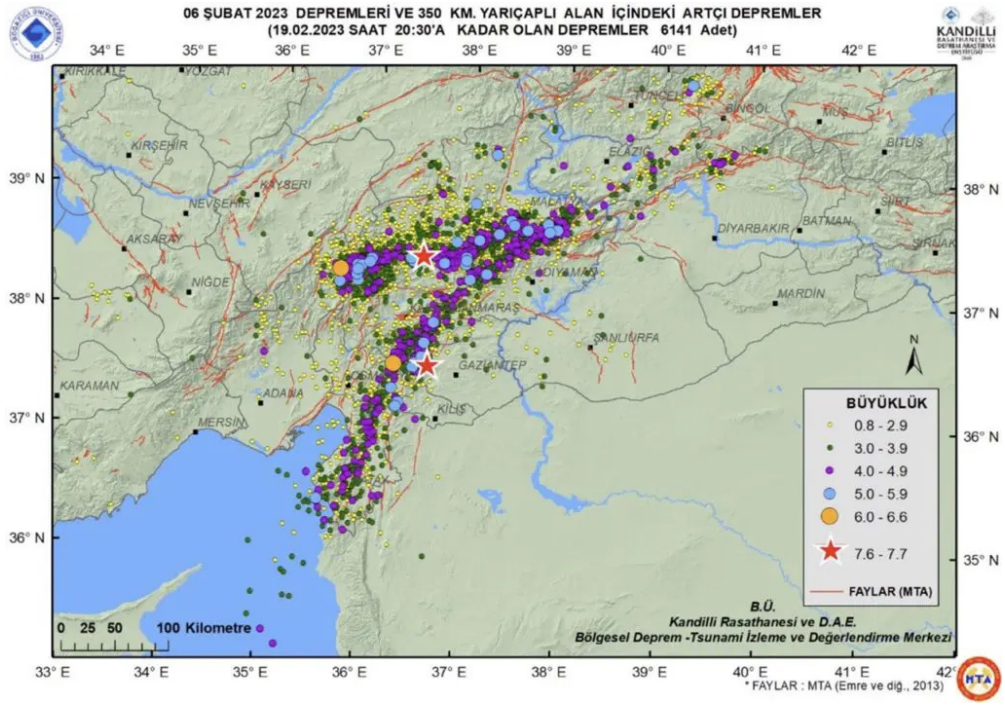

Figure 1. 6th February Earthquakes and Aftershocks within a Radius of 350 km (Kandilli Observatory and Earthquake Research Institute) [5]

The two extremely destructive earthquakes were generated by the activation of the East Anatolian Fault (EAF) system. The stricken area forms the boundary between the tectonic plates of Arabia and Anatolia,[6] which is also very close to the triple junction with the African plate.[7] Figure 2 shows the location of the epicentre and tectonic plates.

Although the earthquakes were felt across the region, ten cities in Türkiye were highly impacted from the disaster. Those are: Kahramanmaraş, Gaziantep, Malatya, Diyarbakır, Kilis, Şanlıurfa, Adıyaman, Hatay, Osmaniye and Adana. The total number of inhabitants of these cities correspond to 13 million, about one-seventh of the overall Türkiye's population. On the other side of the border, in Syria, Aleppo, Latakia, Hama and Idlib were also badly affected with damaged or collapsed buildings.

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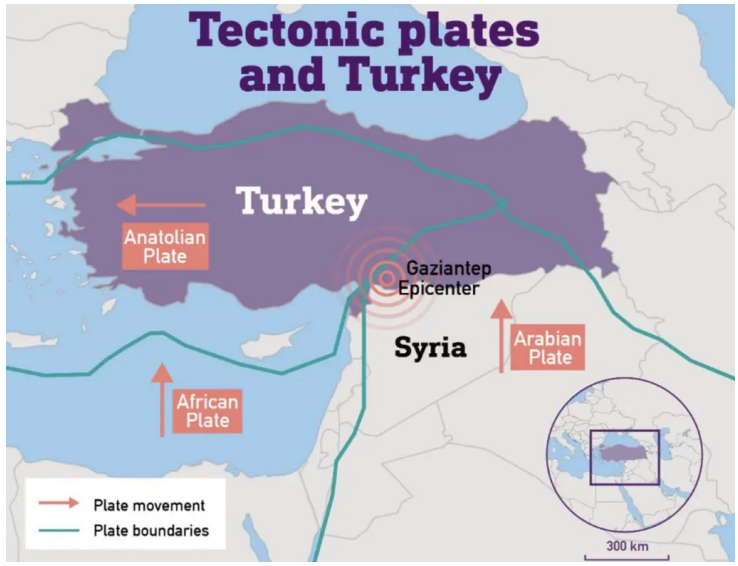

Figure 2 Epicentre of 2023 earthquakes and tectonic plates. Retrieved from Uddin (2023). [8]

This policy brief has been prepared to examine how well the crisis management efforts were implemented during the 2023 earthquakes in Türkiye and neighbouring Syria. The ultimate goal is to identify lessons to be learned from the disaster and improve national and international crisis management in similar cases in the future to reduce human suffering and increase accountability.

2. Crisis management

From an academic viewpoint, crises are grave threats to basic structures or fundamental values and norms of a social system. They require critical decision-making to deal with time pressure and uncertain circumstances.[9] Generally, crisis management refers to processes addressing these unexpected and threatening events for organisations and stakeholders. [10] This management is separable into six steps: risk assessment, prevention, preparedness, response, recovery, and learning. The response step becomes crucial once crises occur.[11] Prevention step, on the other hand, is not applicable in the case of earthquakes. According to McConnell (2011), the success of responses is measurable in effectiveness (control of the crisis), ethicality (fairness of the management), and legitimacy (broadly supported management).[12] The following chapter analyses the effectiveness of the crisis response to the earthquakes in Türkiye and Syria in 2023. For earthquakes, the first 72 hours after the incident are crucial because most survivors are rescued within this timeframe. After three days, survival chances drastically decline.[13] So, in this brief, despite having a holistic approach in reflecting our assessments on risk assessment and preparedness, we will have a special focus on the first 72 hours while tackling "response".

3. Analysis

3.1 Risk Assessment

a. Türkiye

At global scale, each year 500.000 thousand earthquakes occur. One-fifth of those are felt by inhabitants while only about 100 of those earthquakes cause damage and loss. Türkiye is located on a seismically active zone that has produced 23 earthquakes with magnitude of 7 and above since 1500. In 2020 alone, Türkiye has experienced 33.824 earthquakes. 322 of those had a magnitude of 4 and above.[14]

Cognizant of this fact, Turkish scientists and governments have made efforts to map the seismic zoning of the country to produce the first example in 1945. Those maps have been updated based on technological and scientific developments later in 1947, 1963, 1972, 1996, and finally in 2018. The latest version was published on official gazette on 18 March 2018 together with "Türkiye Building Earthquake Regulation (Türkiye Bina Deprem Yönetmeliği in Turkish)". This latest version that features ground acceleration values phases out the concept of earthquake zone. Thus, a citizen can, via e-citizen portal, access earthquake danger data to see what kind of earthquake effects his / her building can be subject to. [15] The map can be seen below at Figure 3.

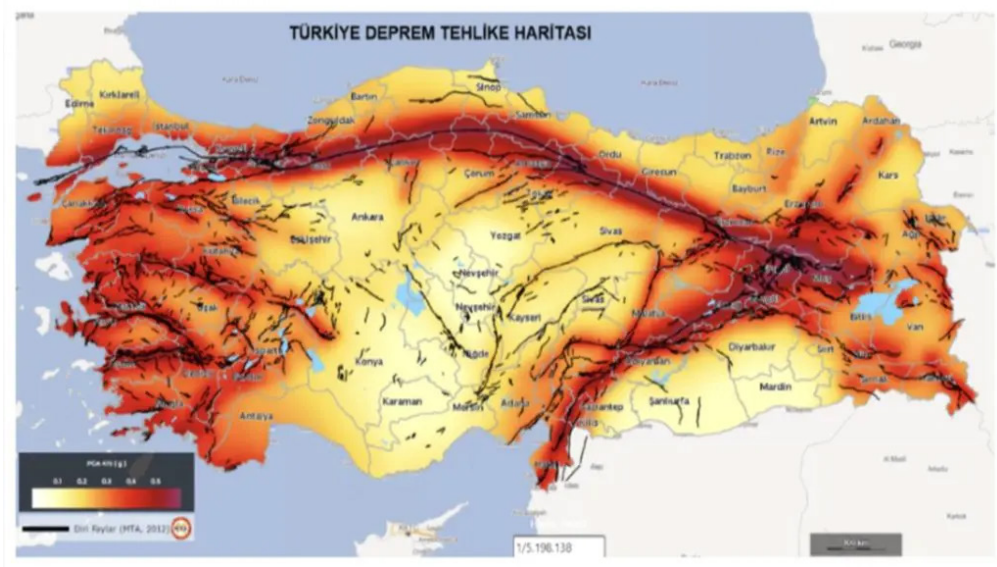

Figure 3. Türkiye Earthquake Danger Map (AFAD) [16]

The earthquakes that occurred on 6 February, are well within Türkiye's Earthquake Map. Prof. Feyzi Bingol, former rector of the University of Euphrates, says, especially after the Elazig earthquake with 6.8 magnitude that occurred in 2020, himself and other scientists were actually expecting an earthquake with a magnitude of 7 could happen in Kahramanmaras. Because the location sat on the intersection of two faults, one leading to Hatay, and the other to Malatya, Elazig and Bingol.[17]

AFAD or Türkiye's Disaster and Emergency Management Presidency records verifies Prof. Bingol's statement. Accordingly, AFAD conducted a national earthquake exercise with participation of 3500 personnel in 2019. The exercise scenario featured an earthquake with magnitude of 7.5 with epicentre at Pazarcik, Kahramanmaras, the same as the epicentre of the 7.8 earthquake.[18] The next year, or in 2020, Kahramanmaraş city Governor's Office and AFAD prepared a Provincial Disaster Risk Reduction Plan (IRAP). The plan detailed the risk with all its components to include magnitude and probable destruction sites. The difference between this plan and the destruction observed during the earthquake are minimal.[19] This shows, at institutional information level, the earthquakes that shook Türkiye on 6 February were not unexpected.

b. Syria

Similar to Türkiye, Syria also experiences earthquakes due to its proximity to tectonic fault lines. Ahmad et al. (2017) describe in their seismic hazard assessment that the earthquake risk in Syria is moderate overall, but it is relatively higher along the Dead Sea Fault System (DSFS).[20] It refers to the fault between the African and Arabian plates, as observable in Figure 2. The Syrian National Seismological Network (SNSN), established in 1995, is the Syrian authority for measuring and monitoring seismic activity. Its main operational organ is the National Earthquake Centre in Damascus, which works closely with the Ministry of Petroleum and Mineral Resources.[21] However, since 2015 there has been no recorded activity of the SNSN. The National Earthquake Centre seems to be currently the primary provider of seismic activity research, even though there is no official statement confirming this takeover. This assumption matches an observation by Alqusairi (2010), who stated that there is a lack of adequate information from Syrian sources on disaster and emergency management.[22] Therefore, most information on this topic stems from sources outside Syria. In short, Syria's exposure to hazards is known and institutionalised in the National Earthquake Centre. However, the organisational strength and mandate seem to be limited, which might be a consequence of the Syrian Civil War. The governance structures before the war were already considered weak and ineffective. Years of conflict amplified this problem in the country.[23] This had grave consequences for the country's crisis preparedness for the 2023 earthquakes, which will be covered in section 3.2b.

3.2 Preparedness

a. Türkiye

In order to minimise the destructive effects of the earthquake, many steps have to be taken at personal and administrative levels. The citizens' awareness about the probability of earthquakes at their exact location, and proper code of conduct in such eventuality will certainly increase resilience. At the administrative level on the other

hand, the administration should set construction standards based on disaster risk and enforce those standards. In doing so, the administration should get expertise and participation of scientists and expert organisations in city planning, engineering, and architecture. Published and regularly updated earthquake danger maps form the first step in the same direction. But unfortunately, that alone does not solve the problem.

The big problematic of earthquakes has taken an important place in public discourse since Golcuk or Marmara earthquake in 1999. In this powerful earthquake with the magnitude of 7.6, the death toll reached 18.373 according to official figures while 365.000 buildings were damaged. Türkiye's Chamber of Geologists, in a report published in 1999, listed three important factors to account for such great destruction: active fault zone, watery alluvium ground, and construction faults. The latter basically referred to faulty construction designs not compatible with the ground, errors in using correct construction material or their low quality, and bad workmanship.[24]

Türkiye's Chamber of Mechanical Engineers is not convinced that the administration has taken required lessons from this earthquake. Through a public communique published on the occasion of the 20th anniversary of the Marmara Earthquake, the Chamber attracted attention to the efforts of administration to avoid scientific and expert organisational inspection to the newly built constructions in an effort to increase rent revenues. Below is an excerpt from this communique:

Türkiye is no better off today than it was after the Marmara earthquake 20 years ago. In site selection decisions, building design, production and supervision there is no scientific and holistic order. This is true to the extent that problematic filling areas, riverbeds and coasts are being opened for development, and shopping malls and skyscrapers are being built everywhere. Incorrect transportation policies, wrong urban transformation practices and the increase in wrong mega projects, cut-off of the links between water beds and green areas, increase number of floods, and formation of heat islands increase the destructive effects of earthquakes. Add to these problems the recent zoning amnesty without considering the earthquake phenomenon and the need to increase the earthquake-resistant building stock, and the rapid construction in post-earthquake gathering sites, it becomes clear that our country is not ready for earthquakes. At this point, we would like to point out that the government's attack on the professions of engineering, architecture and urban planning clears the path for rent-seeking capitalist forces, leads to the domination of the logic of doing business by disregarding professional requirements, and the continuation of the problems of social destruction caused by earthquakes.[25]

As mentioned in the communique also, the current government has used zoning amnesty as a tool to increase votes and increase revenues. In most cases, for constructions to start, special permissions should have been taken from local administrations based on inspections like static, architecture, electricity, and plumbing based on Turkish Standard 500, Disaster Regulations, and Turkish Standard 498. Add to that control requirements at all stages of construction, namely: construction location selection, excavation, base application, iron skeleton laying, laying of levels of the construction, cement filling that also require cement slump test, heat isolation etc.[26] There are millions of buildings that have not or cannot fulfil such control and inspections and thus don't have required permissions to be inhabited. The government gives with these amnesties such non-standard buildings permissions. The last of such amnesties was issued just before elections in June 2018.[27]

The lessons learned from the Marmara earthquake trickled down to new regulations to create new stock of disaster resilient buildings in 2001. The government and local administrations actually have responsibility to recycle or take necessary precautions to make the buildings before 2001 resilient while ensuring those built after this date conform to these construction and control standards. But, unfortunately, with implementations such as zoning amnesties, they have behaved in the opposite direction, increasing stock of low quality, disaster-prone buildings, and constructions.

The videos from the cities impacted from the earthquake unfortunately show so many new buildings destroyed, that it becomes not possible to oversee the complicity of the government in the huge destruction. Predicting the total number of lost lives as about 200.000, Prof. Dr. Övgün Ahmet Ercan says the earthquake regulations are good enough and adds: "If they [government] had complied with this regulation, they would have built structures that would not collapse. The worst part is that the new buildings also collapsed."[28]

In a video circulating in social media, a citizen and lawyer Bedia Büyükgebiz says the building to store laboratory test result documents of workplaces and residences at the Building Inspection and Building Materials Branch Directorate in Hatay was to be demolished upon orders by the governor of Hatay. The building is a one-story building that currently hosts AFAD officials and contains an infirmary with doctors. She asks why to demolish a standing building while the whole city is under rubbles? She concludes the Governor of Hatay wants to destroy evidence.[29] In fact, the building was destroyed and a criminal complaint was filed with the Chief Public Prosecutor's Office against demolition of the building.[30]

Erzin, a town in the middle of epicenters of both earthquakes with a population of 50.000, is a good example to confirm professor Ercan's assertions. The town eluded the destructive impacts of the earthquakes, not seeing t even one building that was demolished during and after the earthquakes. The mayor of the town, Ökkeş Elmasoğlu stated that they followed the rules and did not allow illegal buildings and added, "I even sealed the houses of my relatives. As long as we are not a society that follows the rules, we will continue to experience these sufferings. Not only local governments but also citizens have responsibilities."[31]

b. Syria

As mentioned in section 3.1b, the governmental structures in Syria are relatively weak. Therefore, there are no clear earthquake preparation strategies. Even worse, different parties control different territories in the country. This power struggle is particularly observable in those regions most affected by the 2023 earthquakes. Figure 3 shows that the Syrian government controls most of the country. However, opposition and extremist groups dominate the northwest, Turkish troops the areas in the north, and Kurds in the northeast. Consequently, it is not possible to adequately prepare the region for disasters during the ongoing violent conflict.[32]

Figure 4 Approximate areas of influence in Syria as of October 3, 2022. Retrieved from Humud (2022).[33]

The civil war already destroyed large parts of the Syrian infrastructure, and most of it, along with public services, was never rebuilt since then. The absence of rebuilding initiatives is especially true for areas outside the regime's control, such as northern Syria. In a report on the selective reconstruction in Syria, Agha (2022) states that there is lack of foreign investment as countries seek to avoid indirectly financing the Syrian government.[34] Consequently, it is expectable that northern Syria was generally unprepared for strong earthquakes.

The most recent assessment of the country's earthquake preparedness was published in 2015 and can serve as a reference point for the situation when the strongest earthquakes struck Syria in 2023. This assessment is part of the Logistics Capacity Assessment (LCA) tool by the World Food Programme containing information on the logistics of countries that require humanitarian aid.[35] The report reveals that Syria is ill-prepared for earthquakes due to the absence of coherent crisis management strategies, even though its major urban centres, such as Damascus,

Aleppo, Homs, and Hama, are located in the earthquake zone. The government's limited capacities only allow it to identify shelters and call for international assistance. Due to the high number of internally displaced people (IDPs), the 2015 report calculated that most people affected by earthquakes will not have shelter, access to basic health services, or educational services once they occur. There are estimates that even before the earthquakes occurred, more than 4 million people needed some sort of humanitarian assistance in northern Syria.[36] Additionally, there is only a limited presence of international NGOs due to the problematic political situation in the country. Furthermore, local NGOs do not have the capacity for sophisticated search and rescue missions as they lack expertise and equipment. The lack of organisations and governmental management capacities to prepare for earthquakes makes Syria highly vulnerable to these disasters.[37]

3.3 Response

a. Türkiye

Türkiye's response to the earthquakes on 6 February has been somewhat complicated and not easy to grasp in the first instance. To be more precise, AFAD or Türkiye's Disaster and Emergency Management Presidency has the responsibility to prepare a preliminary report within 45 minutes after any disaster. As the first great earthquake occurred at 04:17 local time, AFAD submitted its report within 43 minutes, at 05:00 to the Ministry of Interior as should be.[38] The Minister of Interior Suleyman Soylu summoned journalists at the press centre to announce the nation about the disaster at 05:38. In the video, he is seen saying himself and other ministers would pass to the disaster area within the day. It would go without saying that all mayors, state and local administrations, military units across the country should have been informed about the disaster to be prepared for a probable deployment for search and rescue operations to be executed in line with contingency plans. Onder Algedik, energy and climate expert asserts if the 600.000 strong Armed Forces were alerted at 06:00, as of 08:00 they could be present in the relief operations.[39]

Unfortunately, this is not what happened. On the very day of the disaster all state institutions fell under a big silence, doing very little about the crisis.

In the following day, or the second day after the disaster (7 February) the situation did not change much. Search and rescue efforts were seen on TV channels but if you asked the locals, those channels were showing only a very small part within the whole reality. If you excluded the parts that the cameras were recording, you would see no relief work at all or nobody coming for help. For example, an MP from Turkish Worker's Party Barış Atay Mengüllüoğlu who was on exploration visit in the disaster area said on this day at 06:30 that no one except volunteer construction workers in Antakya participated in the search and rescue efforts.[40] Despite this statement, the efforts did not intensify till the end of the day. During live broadcast of Habertürk TV at 22:30 local time, the reporter Mehmet Akif Ersoy asked for the camera lights to be turned off to show the level of activity in the search and rescue efforts in Antakya again. The camera showed the whole city was in dark. But even worse than that, viewers understood that the search and rescue efforts were being conducted under camera lights. Ersoy further continued saying, "Hatay is a complete ghost city. I walked on the road using the light of my phone. I heard people shouting quietly between the buildings. There was no search and rescue or aid team for 2.5 km. I walked shamedly, stepping on my toes so they wouldn't hear me walking."[41]

In this second day, AFAD's Director Yunus Sezer, announced there were pledges for support from 65 nations and upon arrival they would be dispatched to the needed locations. Minister of Foreign Affairs Mevlut Cavusoglu announced at 21:30 that 3.319 relief workers from 36 nations were working in the field. But there were problems in coordinating those efforts also. For example, Israeli team that was comprised of 30 doctors, 100 aid workers, and 50 nurses were kept waiting at the airport while their support was needed in the field. It was also reported that search and rescue teams from Switzerland were kept waiting at Adana Airport and teams from Greece were kept waiting at Incirlik Base.[42] It was on this second day that the Ministry of Defense announced it had decided to dispatch brigades of the 2nd Army (headquartered in Malatya) to the disaster areas.[43]

So, in the first 48 hours, the state's existence was poorly felt aside from politicians' interviews saying the coordination and the help was on the way.

Instead, main opposition party or CHP leader Kemal Kilicdaroglu was the first prominent politician to set foot in the disaster area. Together with mayors of Ankara, Istanbul and Izmir, Kilicdaroglu visited Hatay on this day.

On the third day, at early hours, the declaration of state of emergency in 10 most impacted cities was published on the Official Gazette and entered into force. At 13:33, the General Directorate of Highways announced that all main arteries in Türkiye's road network were opened to transportation and that there were no routes closed to traffic due to the earthquake. An interesting announcement came at 14:15 from the Presidency Communication Directorate. Accordingly, Turkish Armed Forces had directed 34 field kitchens and 4 field bakeries to the disaster zone. 8 engineer teams had arrived, and 4 others were in preparation. Turkish Armed Forces was an operational entity in the past. The figures shared created rather disillusionment. It was so little and so late…[44]

Kilicdaroglu and his team continued their visit in the region with Osmaniye and Kahramanmaras on this third day. Responding to President Erdogan's efforts to create a rally around the flag effect, he said: "I have seen the situation of our people on the ground. I refuse to look at what is happening above politics, I refuse to align with

the government. This collapse is precisely the result of systematic rent politics. I will not meet Erdoğan, his palace and the rent gangs on any ground."[45]

Losing the initiative to Kilicdaroglu, Erdogan started his disaster region visits the next fourth day with Adana. From this day on, the whole range of state institutions under strict control of Erdogan, started a political impression management campaign to settle theatre for the upcoming elections. The core messages were:

The disaster is so big that no government can cope with it. To make this ingrained in the public's mind, Erdogan devised the term "the century's catastrophe" or "asrın felaketi" in Turkish to describe the disaster.

The government has been coordinating all efforts and is behind all benevolent work. In a video of reporting from the region on 9 February, the reporter Mehmet Akif Ersoy reported that the locals say: "We are doing search and rescue, we are digging and digging and reaching to the people [under debris]. Pat! a team comes and says 'your work is done, move away, we will take him out.' They call the cameras, they take him out." He then said he heard this from many others at other places too. After he says this, the audience on the field applauds him.[46] There are many other efforts in the similar direction such as putting stickers with AKP logos to the aid trucks and packages.[47]

The main opposition party and any other entity's critiques towards the search and rescue efforts are to be denigrated with the argument that at such terrible days politicians should leverage a language that does not seek political gains.

Public anger should be diverted from the government to the looters, and the perpetrators should be defined as the Syrian refugees.

Propaganda that 98 percent of the destroyed buildings were built before 1999. Actually, this counter factual assertion was openly leveraged by Erdogan during a speech in AFAD.[48] It was quickly refuted through google maps and Copernicus satellite images.[49]

The first 72 hours are of utmost importance for rescuing lives in disasters. After that, chances for survival drop. If especially the winter conditions that showed temperature range between -5 and 11 °C are considered, the chances for rescuing lives after 72 hours becomes extremely low.[50] Taking this into account and also to keep this brief concise, we mainly looked into those first 72 hours. Beyond 72 hours, there are in fact many rescues in the fourth day especially. Our count based on CNN Turk webpage[51] that announces the names of the survivors has revealed the following figures for the number of survivors:

Date /Day	Number of Survivors
9 February (Day 4)	74
10 February (Day 5)	31
11 February (Day 6)	14
12 February (Day 7)	33
13 February (Day 8)	19
14 February (Day 9)	15
15 February (Day 10)	2
16 February (Day 11)	2
18 February (Day 13)	4

The poor conduct in the relief operations and AFAD that has central role in this has attracted attention of local and external media, eliciting extremely interesting facts. AFAD was established by the law number 5902 in 2009 to coordinate all relief efforts in case of a disaster.[52] Yet, in the years leading to the latest earthquake, it has been seen as a place to employ President Erdoğan and his minister's friends and family to the key governing positions. With assignments by the President Erdogan that was published on January 11, 2023, the vice President of AFAD and key directors were replaced with interesting figures. For example, the vice president Ugur Sezer was in bureaucracy and his political career skyrocketed after a physical assault was made to Kilicdaroglu in June 2019 in Cubuk, Ankara where Sezer was the governor. He is also a former consultant of Minister Soylu. Housing and Construction Works General Director Nehar POÇAN, on the other hand, is the husband of Minister of Environment Murat Kurum's sister. Disaster Response General Director İsmail PALAKOĞLU is a theologian and a former Diyanet member.[53] As the inefficiency of AFAD began to be more circulated, the government summoned Mehmet Güllüoğlu, the former President of AFAD from Tanzania where he was ambassador.[54]

Nepotism is not the only problem in AFAD. After the earthquake, CHP leader Kemal Kilicdaroglu cited a "Duzce Earthquake Report" that was originally prepared by AFAD itself for the Ministry of Interior to detail problems around operations and crisis management in AFAD. The report reads:

"After the earthquake, Türkiye Disaster Response Plan (TAMP) could not be put into effect because disaster groups and institutions were not sufficiently prepared. Since TAMP could not be implemented, disaster management turned into chaos and confusion, leading to confusion of duties and authorities. Decisions could not be taken properly due to lack of communication. Disaster response groups could not manage their resources effectively and thus the response was inadequate. […] Losses of life and property will be prevented by making the housing stock resilient in provinces with high earthquake risk, as in the case of Düzce. Implementation of IRAP before the disaster will reduce the risks and effective implementation of TAMP after the disaster will reduce the losses. For a disaster-resilient Türkiye, we need to prepare both our institutions and citizens with a holistic approach before, during and after disasters."[55]

Despite these problems in AFAD, the organization's already low TRL 12 billion budget saw a 33,6 % cut in 2023, leaving it with an inunssifient budget of 8,1 billion. This leaves less personnel and resources to conduct and coordinate relief efforts.

Beyond AFAD, Türkiye becomes increasingly authoritarian resulting in the erosion in the autonomy of the institutions and their management. The ministries, instead of taking direct action in their areas of responsibility, await orders from the President to manage and contribute to the response and recovery efforts in the crisis. Asli Aydintaşbaş, a visiting fellow at the Brookings Institution, when summarising reasons for such great destruction and loss of life, cites President Erdogan's centralisation efforts over the past years as one of the most prominent factor. Accordingly, this further produced poor coordination with local governmental institutions.[56]

The last but not least important is the rate of corruption in Türkiye. Director of Transparency International in Türkiye, Oya Ozarslan, says during a video interview that Türkiye has been making a free fall since 2013, in terms of corruption perceptions index. Accordingly, the country that ranked 53rd with a score of 50 in 2013 currently ranks 101st with a score of 36. She says Türkiye has satisfactory laws and regulations for construction, control and corruption. But, those laws are not implemented. She further highlights importance of accountability based on the fact that the government has been collecting a disaster tax since 1999 that is calculated to have amounted to US$38 billion. If the roads get destroyed or airports are destroyed, then for what purpose has this tax money used she asks. This is a question asked after each disaster. The governments see this as an additional budget and in the past some PMs openly stated they have made double-lane roads with the money.[57]

At the time of writing this article, according to official AFAD figures, there has been 41.020 fatalities in the earthquakes.[58] Minister of Environment had earlier announced there were 84.726 buildings with 332.947 independent units that were demolished, urgently needed to be demolished or heavily damaged.[59] Looking at these figures, one cannot help asking, if the regulations were enforced and the state with all its branches worked in perfect synchronisation to conduct search and rescue since the first moment, what would be of those figures? We will never be able to know that.

b. Syria

The large-scale destruction and humanitarian suffering put the international community in a complicated situation to support the Syrian government's relief efforts. It forces opponents of the regime to cooperate with it to reach affected people in the north. The most critical problem in the response effort is to reach the affected areas. Türkiye also does not wish to help Kurdish militias in Syria. Figure 4 shows the power distribution in the country. Over the past years, territories under non-governmental control received international humanitarian aid via the Turkish border. However, the U.N. Security Council must approve this process every six months.[60] There is only one route via Bab al-Hawa because Russia blocks other options with its veto power in the Security Council. This restriction limits the amount of potential aid delivered across the border. Russia and Syria claim that all international efforts should go through the Syrian government as the sovereign entity of the country, but primarily Western countries oppose this idea.[61]

While many opponents of President Bashar al-Assad blamed him for the ineffective Syrian response, it is critical to notice that also within the rebel-held areas, there is mismanagement. The Islamist group Hayat Tahrir al-Sham controls most of these areas. The organisation announced that it does not accept aid coming from government-held areas as it wants the international community to take stronger action against Assad. Hayat Tahrir al-Sham also blocked convoys from its enemies in Kurdish-held areas. The affected population bears the burden of aid politicisation by the Islamist group.[62]

In short, areas under non-governmental control in Syria wish to receive aid from the international community. The goal is to put higher pressure on Assad. However, the Syrian government, controlling the rest of the country, states that all aid should go through the government. The overall goal is to increase Assad's legitimacy. Therefore, the earthquake response in Syria is highly politicised.

Admittedly, the earthquake response in Syria was even worse compared to neighbouring Türkiye due to the complicated political and humanitarian situation even before the earthquakes occurred. In section 2, we explained that the crisis response is assessable on effectiveness, ethicality, and legitimacy. It is difficult to justify the legitimacy of the earthquake response in Syria as different entities rule over the country. Certainly, the crisis response was not ethical as governmental-controlled areas had better access to equipment such as excavators and governmental support than other areas. This circumstance also explains the overall ineffectiveness of relief efforts.

The borders within the country between political entities prevented a quick and coherent crisis response. Even though international aid is slowly arriving in northern Syria, it consists of shelters, food, and medical equipment, not search and rescue equipment such as excavators.[63]

This circumstance shows that the hope of finding people alive is over. The lack of search and rescue equipment was the greatest weakness in the crisis response, intensely illustrated by those videos circulating the internet where people are condemned to hear their relatives dying under ruins without realistic chances of helping them. The response phase in the crisis management cycle is over now, as it only refers to the immediate time after a crisis occurs. The crisis management enters the recovery phase that addresses rebuilding and supporting affected people in the long run.

4. Conclusion and policy recommendations

The large-scale destruction and humanitarian suffering in Türkiye and Syria are consequences of mismanagement and extreme political preconditions, not just the earthquakes themselves. While it is undeniable that those earthquakes would have significantly affected the region, the ineffective crisis response showed that responsible authorities neither in Türkiye nor Syria adequately prepared for the crisis.

Below are some policy recommendations for Türkiye and Syria to prepare for an effective crisis response to future possible scenarios:

Both countries are located in a seismically active region and earthquakes are an inevitable part of life. The seismic zoning of both countries should be revised while construction regulations should be developed or strengthened to ensure that structures can withstand earthquakes. The lessons that can be derived from the latest earthquakes should be reflected in these efforts. Especially in Türkiye, there is an expectation of a big earthquake in Istanbul. Sufficient government funds should be allocated to check resistance of the current buildings while putting additional pressure for ensuring conformity to the earthquake standards.

Both governments should develop a comprehensive earthquake risk management plan that will outline how resources (from inside and outside disaster area to include personnel, equipment, and expandables) will be generated, transported and delivered. This plan could define roles and responsibilities in a comprensive manner that will employ all resources to include NGOs, CSOs, and citizens. The plan could prioritize geographic and functional areas to save more lives.

Both countries should invest in early warning systems for earthquakes as the time saved can save thousands of lives, giving people time to evacuate or take other safety measures. Dokuz Eylül University (DEÜ) of Türkiye has already developed an earthquake early warning system with the name DEUSİS. The system announced this February should be further developed.

Institutions operating national emergency response systems, namely Disaster and Emergency Management Presidency (AFAD) in Türkiye and Syrian Civil Defense and the National Emergency Management Authority (NEMA) in Syria, need to be supported to provide a more efficient and effective response to earthquakes. This could include measures such as increasing the number of emergency responders, upgrading equipment and technology, ensuring adequate training and new legislation.

Education and public awareness are critical components of earthquake preparedness. The government could invest in public awareness campaigns to educate citizens about earthquake risks, safety measures, and emergency procedures. The governments, media and civil society should invest more on ethics education also, highlighting the role of not abiding by construction standards and corruption in the magnitude of the destruction.

Regular drills are key to prepare for future disasters. They provide conditions to implement standards for collaboration with different institutions and CSOs, to increase interoperability, and identify areas for improvement.

Collaboration with international organizations that specialize in earthquake preparedness and response will increase capacities of both countries. The collaboration could include sharing best practices, exchanging knowledge and accessing resources and funding for disaster preparedness. This recommendation will be complicated to be implemented in Syria due to war conditions and its political repercussions.

Syria, is a war torn country. International society should mobilize more resources to intervene and relieve sufferings.

The international community must provide humanitarian aid in both regions in the crisis recovery phase. Particularly Western countries have no choice but to cooperate to some extent with the Assad regime if they wish to help the affected people.

References

1 USGS, "M 7.8 – 26 km ENE of Nurdagi, Turkey," February 6, 2023. https://earthquake-usgs-gov.

2 USGS, "M 7.5 – 4 km SSE of Ekinözü, Turkey," February 6, 2023. https://earthquake.usgs.gov/earthquakes/eventpage/us6000jlqa/executive.

3 "Bölgesel Deprem-Tsunami İzleme ve Değerlendirme Merkezi (BDTIM)," Kandilli Rasathanesi Ve Deprem Araştirma Enstitüsü (KRDAE), accessed on February 9, 2023, http://udim.koeri.boun.edu.tr/zeqmap/hgmmap.asp.

4 "Basın Bülteni: 06 ŞUBAT 2023 EKİNÖZÜ KAHRAMANMARAŞ DEPREMİ," B.Ü. Kandilli Rasathanesi ve DAE Bölgesel Deprem-Tsunami İzleme ve Değerlendirme Merkezi, February 6, 2023, http://www.koeri.boun.edu.tr

5 Ibid.

6 J.M.Insua et al., "Una visión geológica del terremoto de Turquía," Sinc, February 10, 2023, https://www.agenciasinc.es/Opinion/Una-vision-geologica-del-terremoto-de-Turquia.

7 Colarossi, Jessica. "Why were the two earthquakes that struck Turkey and Syria so catastrophic – and could they have been predicted." The Brink. February 9, 2023. https://www.bu.edu/articles/2023/two-earthquakes-turkey-syria-predicted/

8 Uddin, Rayhan. "Why is Turkey so prone to earthquakes?" Middle East Eye. February 6, 2023. https://www.middleeasteye.net/news/turkey-earthquake-why-so-prone

9 Rosenthal, Uriel, and Kouzmin, Alexander. "Crises and crisis management: Toward Comprehensive government decision making." Journal of Public Administration Research and Theory 7, no. 2 (April 1997): 277-304. https://doi.org/10.1093/oxfordjournals.jpart.a024349

10 Bundy, Jonathan, Pfarrer, Michael, Short, Cole, and Coombs, Timothy. "Crises and crisis management: Integration, interpretation, and research development." Journal of Management 43, no. 6 (2017): 1661-1692. https://doi.org/10.1177/0149206316680030

11 Pursiainen, Christer. The crisis management cycle. London: Routledge, 2017.

12 McConnell, Allan. "Success? Failure? Something in-between? A framework for evaluating crisis management." Policy and Society 30, no. 2 (2011): 63-76. https://doi.org/10.1016/j.polsoc.2011.03.002

13 Kelman, Ilan. "Beyond disaster, beyond diplomacy." In Natural disasters and development in a globalising world, edited by Mark Pelling, 110-123. London: Routledge, 2003. https://doi.org/10.4324/9780203402375

14 "Türkiye'de gerçekleşen büyük depremler," TRT HABER, March 3, 2021, https://www.trthaber.com/haber/turkiye/turkiyede-gerceklesen-buyuk-depremler-561205.html.

15 Bülent Özmen, "The Historical Development of Seismic Zoning Maps of Turkey," Geological Bulletin of Turkey 55, no. 1(January 2012):43.

16 "Türkiye Deprem Tehlike Haritası," AFAD, January 1, 2019, https://www.afad.gov.tr/turkiye-deprem-tehlike-haritasi.

17 Dilek Gul, "Feyzi Bingöl: Elazığ'dakinden sonra bölgede büyük deprem bekleniyordu; ancak ikincisi bizi şaşırttı," EuroNews, February 2, 2023, https://tr.euronews.com/.

18 "Ulusal Deprem Tatbikatı Kahramanmaraş'ta Gerçekleştirildi," AFAD, October 11, 2019, https://www.afad.gov.tr/ulusal-deprem-tatbikati-kahramanmarasta-basladi.

19 "Beklenen Felaket! AFAD, Kahramanmaraş'taki depremi 2020'de tüm ayrıntılarıyla yazmış," Yurt. February 2, 2023, https://www.yurtgazetesi.com.tr/guncel/beklenen-felaket-afad-kahramanmarastaki-depremi-2020de-tum-ayrintilariyla-ya-h219402.html.

20 Ahmad, Raed Ali., Singh, Ramesh, and Adris, Ahmad. "Seismic hazard assessment of Syria using seismicity, DEM, slope, active faults and GIS." Remote Sensing Applications: Society and Environment 6, (2017): 59-70. https://doi.org/10.1016/j.rsase.2017.04.003

21 Abdul-Wahe, Mohamad Khir, and Asfahani, Jamal. "The recent instrumental seismicity of Syria and its implications." Geofísica internacional 57, no. 2 (March 2018): 121-138. https://www.redalyc.org/journal/568/56871785003/html/

22 Alqusairi, Daai. "Emergency management and public health preparedness of Syria." Arkansas Tech University. July 2020. https://training.fema.gov/

23 Karimi, Mahdi, and Shafaee, Masoud Mousavi. “Poor governance and civil war in Syria.” Turkish Journal of Middle Eastern Studies 5, no. 1 (June 2018): 31-55. https://doi.org/10.26513/tocd.383377

24 “17 Ağustos Depremi: 1999 ve sonrasında neler yaşandı, kaç kişi hayatını kaybetti?,” BBC News Türkçe, August 12, 2019, https://www.bbc.com/turkce/haberler-turkiye-49322860.

25 “17 AĞUSTOS 1999 MARMARA DEPREMİNDEN DERSLER ÇIKARILMALI!,” Chamber of Mechanical Engineers, August 18, 2019, https://www.mmo.org.tr/merkez/basin-aciklamasi/17-agustos-1999-marmara-depreminden-dersler-cikarilmali.

26 İnşaat Teknolojisi: Deprem ve Önlemler (Ankara: T.C. Milli Eğitim Bakanlığı, 2011), 29-32, http://megep.meb.gov.tr/mte_program_modul/moduller_pdf/Deprem%20Ve%20%C3%96nlemler.pdf.

27 Mustafa Çakır, “İktidar her seçim öncesi imar affıyla ilgili çalışma yaptı, son teklif komisyonda bekliyor,” Cumhuriyet, February 12, 2023, https://www.cumhuriyet.com.tr/turkiye/iktidar-her-secim-oncesi-imar-affiyla-ilgili-calisma-yapti-son-teklif-komisyonda-bekliyor-2050946.

28 “Deprem Bilimci Ahmet Ercan: 200 bin kişi göçük altında kaldı,” Cumhuriyet, February 8, 2023, https://www.cumhuriyet.com.tr/siyaset/deprem-bilimci-ahmet-ercan-200-bin-kisi-gocuk-altinda-kaldi-2049680.

29 Karşı (@KarsiAktuel), “Avukat Bedia Büyükgebiz, Hatay’da Yapı Denetim ve Yapı Malzeme Şube Müdürlüğü’nde yer alan işyeri ve konutların laboratuvar test sonuç evraklarının bulunduğu binanın yıkılacağını söyledi. Engel olmaya çalıştı, ama olmadı, başaramadı, yıktılar. Hatay Valisi delilleri yok etti.” Twitter post, February 12, 2023, https://twitter.com/.

30 “Hatay’da Yapı Denetim Şube Müdürlüğü binasının kepçeyle yıkılmasına suç duyurusu,” Evrensel, February 15, 2023, https://www.evrensel.net/haber/482394/hatayda-yapi-denetim-sube-mudurlugu-binasinin-kepceyle-yikilmasina-suc-duyurusu?a=U7cm.

31 “Depremin ortasındaki ilçede tek bir bina bile yıkılmadı… Belediye Başkanı ‘Kaçak binaya izin vermiyoruz’ dedi,” Turkiye. February 11, 2023. https://www.turkiyegazetesi.com.tr/.

32 Humud, Carla. “Armed conflict in Syria: Overview and U.S. response.” Congressional Research Service. November 8, 2022. https://www.documentcloud.org/

33 Ibid.

34 Agha, Munqeth Othman. “The selective reconstruction of Syria: Challenges for EU policy.” Instituto Affari Internazionali. October 21, 2022. https://www.iai.it/en/pubblicazioni/selective-reconstruction-syria

35 Logistics Capacity Assessment. “LCA Homepage.” https://dlca.logcluster.org/display/public/DLCA/LCA+Homepage

36 Evans, Dominic, and Birsel, Robert. “Explainer: How Syria’s war has hindered earthquake relief.” Reuters. February 13, 2023. https://www.reuters.com/world/middle-east/how-syrias-war-has-hindered-earthquake-relief-2023-02-13/

37 Logistics Capacity Assessment. “1.1 Syrian Arab Republic Humanitarian Background.” 2015. https://dlca.logcluster.org/display/public/DLCA/1.1+Syrian+Arab+Republic+Humanitarian+Background

38 23 DERECE (@yirmiucderece), “Önder Algedik: “Deprem 04.17’de oldu, AFAD saat 05.00’te ön raporu bakana teslim etti. Bu raporda depremin büyüklüğü, nereleri ve kaç kişiyi etkileyeceği belirlenmişti. Saat 06.00’da ordu harekete geçirilseydi, 08.00’de her enkaz başında askerler bulunabilirdi.” Twitter post, February 12, 2023, https://twitter.com/yirmiucderece/status/1624902661530087425.

39 23 DERECE (@yirmiucderece), “Önder Algedik: “Deprem 04.17’de oldu, AFAD saat 05.00’te ön raporu bakana teslim etti. Bu raporda depremin büyüklüğü, nereleri ve kaç kişiyi etkileyeceği belirlenmişti. Saat 06.00’da ordu harekete geçirilseydi, 08.00’de her enkaz başında askerler bulunabilirdi.” Twitter post, February 12, 2023, https://twitter.com/yirmiucderece/status/1624902661530087425.

40 “Deprem felaketinde ikinci gün: Can kaybı artıyor,” DW, February 7, 2023, https://www.dw.com/tr.[41] “Habertürk canlı yayınında ışıklar kapatılınca gerçek ortaya çıktı,” Oda TV, February 7, 2023, https://www.odatv4.com/guncel/haberturk-canli-yayininda-isiklar-kapatilinca-gercek-ortaya-cikti-269900.

41 “Habertürk canlı yayınında ışıklar kapatılınca gerçek ortaya çıktı,” Oda TV, February 7, 2023, https://www.odatv4.com/guncel/haberturk-canli-yayininda-isiklar-kapatilinca-gercek-ortaya-cikti-269900.

42 “Ekipler Neden Havalimaninda Bekletiliyor?,” Airport Haber, February 7, 2023, https://www.airporthaber.com/havacilik-haberleri/ekipler-neden-havalimaninda-bekletiliyor.html.

43 “Son dakika: TSK, 2. Ordu’ya bağlı tüm tugaylar deprem bölgelerine sevk ediyor,” Turkiye, February 7, 2023,

https://www.turkiyegazetesi.com.tr/gundem/son-dakika-haberi-tsk-2-orduya-bagli-tum-tugaylari-deprem-bolgelerine-sevk-ediyor-947457.

44 "Deprem felaketinde üçüncü gün: Can kaybı 9 bini aştı," BİRGÜN, February 8, 2023, https://www.birgun.net/haber/deprem-felaketinde-ucuncu-gun-can-kaybi-9-bini-asti-420564.

45 "Kılıçdaroğlu'nun, Erdoğan'a sert eleştiri yönelttiği videosu, iktidar ve ittifak ortaklarınca nasıl yorumlandı?," BBC NEWS Türkçe, February 9, 2023, https://www.bbc.com/turkce/articles/cer2e33v3jro.

46 "Gazeteci Mehmet Akif Ersoy: Kameraları çağırıp 'sizin işiniz bitti' diyorlar," BİRGÜN, February 9, 2023. https://www.birgun.net/.

47 Please see news at the following links: https://www.evrensel.net/, https://www.yenicaggazetesi.com.tr/ , https://onedio.com/ , https://www.cumhuriyet.com.tr/

48 AYKIRI (@aykiricomtr). "Erdoğan: "Son afette yıkılan tüm binaların yüzde 98'inin 1999 öncesi inşa edilenler olması, bize bina denetimi ve standardı konusunda kat ettiğimiz ilerlemeyi göstermekle birlikte işi daha sıkı tutmamız gerektiğini de hatırlatıyor."" February 14, 2023, https://twitter.com/

49 Mesut Ersöz (@mesutersoz). "Uydu fotoğraflarına göre Kahramanmaraş'ın batısında binaların büyük kısmı 2004 sonrasında inşa edilmiş." February 14, 2023, https://twitter.com/

50 A moderating factor to balance cold can be said that the first earthquake took place at 04:17 when those afflicted were mostly in their beds under blankets.

51 "Bugün enkazdan çıkan var mı? 16 Şubat Deprem enkazından kurtulanların isimleri!." CNN TURK. February 16, 2023. https://www.cnnturk.com/turkiye/bugun-enkazdan-cikan-var-mi-16-subat-deprem-enkazindan-kurtulanlarin-isimleri.

52 Law nr. 5902 About Structure and Tasks of Interior Disaster and Emergency Management Presidency, Official Gazette, June 17, 2009, https://www.resmigazete.gov.tr/eskiler/2009/06/20090617-1.htm. The tasks given by the law to its Earthquake Department are as follows:

ARTICLE 12 – (1) The duties of the Earthquake Department are as follows:

a) Earthquake preparedness, response, earthquake risk management,

b) Carrying out zoning, planning and project procedures for places that are likely to be damaged in earthquakes and places that have been damaged,

c) Identification and effective use of all kinds of resources belonging to public, private and non-governmental organizations and foreign individuals and organizations that can be used in earthquake preparedness, response and recovery phases,

d) Informing the public about earthquakes,

e) To determine, monitor and evaluate the policies to be implemented on earthquake-related issues and to provide consultancy to other units of the Presidency in the execution of earthquake-related services.

f) To perform similar duties to be assigned by the President.

53 "AFAD depreme "bir ay tecrübeli" yöneticilerle yakalandı: Soylu'nun danışmanı, Kurum'un enişteşi, Diyanet görevlisi ilahiyatçı" Serbestiyet, February 10, 2023, https://serbestiyet.com/.

54 "Tanzanya Büyükelçiliğine atanmıştı. AFAD eski başkanı geri çağrıldı." Aykırı, February 10, 2023. https://www.aykiri.com.tr/tanzanya-buyukelciligine-atanmisti-afad-eski-baskani-geri-cagrildi/34143/.

55 "Tanzanya Büyükelçiliğine atanmıştı. AFAD eski başkanı geri çağrıldı." Aykırı, February 10, 2023. https://www.aykiri.com.tr/tanzanya-buyukelciligine-atanmisti-afad-eski-baskani-geri-cagrildi/34143/.

56 ABC News. "Erdoğan slammed over poor quake infrastructure preparation, relief efforts." February 9, 2023. https://abcnews.go.com/International/erdoan-slammed-poor-quake-infrastructure-preparation-relief-efforts/story?id=97005992

57 Ezo Ozer, "Yolsuzluk ve depremi Uluslararası Şeffaflık Örgütü Temsilcisi Oya Özarslan değerlendirdi," Interview on Youtube, February 7, 2023, https://www.youtube.com/watch?v=FoXXL43eXo0.

58 "Kahramanmaraş'ta Meydana Gelen Depremler Hk. Basın Bülteni-33" AFAD, February 19, 2023, https://www.afad.gov.tr/kahramanmarasta-meydana-gelen-depremler-hk-basin-bulteni-33.

59 "BAKAN KURUM: "84 BİN 726 BİNA YIKIK, ACİL YIKILACAK VE AĞIR HASARLI OLARAK TESPİT EDİLMİŞTİR"."

Türkiye Cumhuriyeti Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, accessed on February 20, 2023, https://www.csb.gov.tr/bakan-kurum-84-bin-726-bina-yikik-acil-yikilacak-ve-agir-hasarli-olarak-tespit-edilmistir-bakanlik-faaliyetleri-38433.

60 Evans, Dominic, and Birsel, Robert. "Explainer: How Syria's war has hindered earthquake relief." Reuters. February 13, 2023. https://www.reuters.com/world/middle-east/how-syrias-war-has-hindered-earthquake-relief-2023-02-13/

61 Deen, Thalif. "Humanitarian aid to earthquake victims hindered by politics – & limited access." Global Issues. February 13, 2023). https://www.globalissues.org/news/2023/02/13/33042

62 Azhari, Timour, and Gebeily, Maya. "Syria quake aid held up by hardline group, U.N. says." Reuters. February 12, 2023. https://www.reuters.com/world/middle-east/syria-quake-aid-held-up-by-hts-approval-issues-says-un-spokesperson-2023-02-12/

63 Sherlock, Ruth. "Northern Syria, already ravaged by war, is desperate for aid after the earthquake." NPR. February 11, 2023. https://www.npr.org/2023/02/11/1156305956/earthquake-survivors-in-northern-syria-already-ravaged-by-war-are-unable-to-rece

Navigating Challenges and Harnessing Potential: Refugee Entrepreneurship and Immigrant Integration

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Abstract

This paper examines the intricate landscape of refugee entrepreneurship in the United States, marked by a duality of significant barriers and untapped opportunities. We argue that, despite encountering numerous obstacles, refugee entrepreneurs possess the potential to substantially contribute to their integration and the economic dynamism of their communities. Through targeted support and policy reforms, the entrepreneurial endeavors of refugees can be a powerful catalyst for societal and economic enrichment.

Keywords

Entrepreneurship, integration, immigration, gender, refugee women.

Introduction

The journey of refugees toward entrepreneurship in the United States is a testament to resilience in the face of adversity. Embarking on entrepreneurial ventures, refugees—especially women—encounter a multitude of barriers, from navigating unfamiliar legal systems to overcoming societal biases. Yet, these endeavors represent more than mere survival strategies; they are avenues for economic independence, societal integration, and contributions to the vibrancy of local economies. This paper articulates the belief that nurturing the entrepreneurial spirit within the refugee community is essential not only for the economic well-being of refugees themselves, but also for the enrichment of the broader society. Through an in-depth exploration, we aim to shed light on the complex interplay of challenges and opportunities in refugee entrepreneurship, advocating for strategic support and policy innovations that can unlock this untapped potential.

Literature Review

The academic discourse on refugee entrepreneurship is burgeoning with a body of research exploring the multifaceted challenges and contributions of refugee entrepreneurs. Our recent research projects (Aydiner & Rider, 2024; Aydiner & Rider, 2022a, 2022b) highlight the legal, financial, cultural, and market-related hurdles that refugees must navigate. Simultaneously, this body of work illuminates the resilience, creativity, and determination that characterize their entrepreneurial efforts. Despite the recognition of these dynamics, there remains a significant gap in understanding the specific mechanisms of support that effectively empower refugee entrepreneurs, especially in increasing access to short-term support and broadening into long-term support. This paper contributes to the conversation by critically analyzing existing support structures and advocating for comprehensive policy reforms that better facilitate refugee entrepreneurship as a pathway to integration and economic contribution.

Challenges and Barriers

Refugee entrepreneurs face a daunting array of challenges that can stifle their entrepreneurial ambitions. Legal complexities, including visa restrictions and work authorization issues, present formidable hurdles. Financial obstacles, such as lack of access to capital and credit, further compound these difficulties. Moreover, cultural barriers, including language proficiency and unfamiliarity with local business practices, can impede market integration. For women refugees, these challenges are intensified by gender discrimination and societal expectations, limiting their entrepreneurial opportunities and access to resources.

Potential and Contributions

Despite these barriers, refugee entrepreneurs embody a remarkable potential for innovation and economic contribution. Their ventures not only facilitate personal and familial economic independence but also inject diversity and vitality into local economies. Refugees often identify niche market opportunities, bringing unique products and services that reflect their diverse cultural backgrounds to meet consumer needs. Furthermore, by creating jobs, they contribute to the economic development of their communities, and offer increased opportunities for job placement of refugees. The success stories of refugee entrepreneurs highlight the transformative impact of entrepreneurship on personal growth, community engagement, and societal integration.

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Support Systems and Policy Recommendations:

Comprehensive support systems and policy reforms are essential to harnessing the potential of refugee entrepreneurship. Mentorship programs tailored to the unique needs of refugees can provide invaluable guidance, while access to microfinance and small business loans can alleviate financial constraints. Policy reforms should aim to simplify legal pathways to entrepreneurship, enhance access to financial resources, and promote inclusivity and diversity in business ecosystems. Additionally, initiatives that foster community connections and networks can significantly bolster the business success rates and sustainability of refugee entrepreneurs.

Counterarguments and Rebuttals

Critics might argue that the focus on entrepreneurship diverts attention from broader employment integration strategies for refugees. However, entrepreneurship offers a distinct avenue for economic self-sufficiency and societal contribution, especially for those facing barriers to traditional employment, such as barriers to foreign credential recognition and gender inequalities in access to the formal economy. Entrepreneurship not only empowers refugees to leverage their skills and experiences, but also fosters innovation and economic diversity within host communities. Thus, supporting refugee entrepreneurship is not a diversion but a complementary approach to broader employment integration efforts with the potential for far-reaching economic and social benefits.

Conclusion

Refugee entrepreneurship stands at the intersection of challenge and opportunity, offering a viable pathway to economic independence, societal integration, and community enrichment. This paper has delineated the complex barriers facing refugee entrepreneurs and underscored the transformative potential of their success. Strategic support and policy reforms are crucial to unlock this potential, empowering refugees to become self-sufficient in their new communities. Further research is imperative to deepen our understanding of effective support mechanisms and to inform policies that facilitate refugee entrepreneurship as a cornerstone of successful integration and economic development. This presents an opportunity to engage with policy leaders, non-profit agencies, and local business leaders to create a supportive network in order to provide ongoing guidance and resource development to refugees in the forms of mentorship, legal and financial resources, entrepreneurial training, networking opportunities between refugees and local citizen entrepreneurs, etc. By doing so, we not only aid in the personal and economic empowerment of refugees, but also enrich the fabric of our communities. The journey of refugee entrepreneurs is one of resilience and determination, reflecting broader narratives of migration, adaptation, and contribution. As such, their success is not merely a testament to individual perseverance, but a reflection of the strength and potential of inclusive, supportive societies.

In conclusion, this paper advocates for a multifaceted approach to supporting refugee entrepreneurship, emphasizing the need for targeted policies, community support systems, and further research. It calls on policymakers, business leaders, and community organizations to recognize and invest in the potential of refugee entrepreneurs. By fostering an environment that supports their entrepreneurial endeavors, we can unlock a wellspring of economic and social benefits for both refugees and their host communities. The stories of refugee entrepreneurs challenge us to reimagine our approaches to integration, economic development, and community building, highlighting the imperative for action, empathy, and innovation.

References

Aydiner, C., & Rider, E. (2024 forthcoming). Breaking Barriers: Women Refugee Entrepreneurship and Integration Frameworks in America. In N. Ranabahu, H. P. de Vries, & R. T. Hamilton (Eds.), Refugee Entrepreneurship: A Research Companion. Routledge.

Aydiner, C., & Rider, E. L. (2022). Reskilled and Integrated, but How? Navigating Trauma and Temporary Hardships. International Journal of Environmental Research and Public Health, 19(20), 13675. https://doi.org/10.3390/ijerph192013675.

Aydiner, C., & Rider, E. (2022). Migration policies and practices at job market participation: Perspectives of highly educated Turks in the US, Canada, and Europe. International Journal of Sociology and Social Policy, 42(5/6), 399-415. https://doi.org/10.1108/IJSSP-02-2021-0044.

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